NWS Burlington Skywarn Spotter

Winter Course

Robert Haynes

National Weather Service
Burlington

Follow Us:

www.weather.gov/btv

Presentation Layout

- What is Skywarn? What does it mean for us?
- Overview of the National Weather Service in Burlington
- Winter Hazards and Safety
- Winter Weather and Winter Storms
- How to Measure Snow and Ice
- Reporting on mPING – Addition of Snow Squalls

What is Skywarn

- National network of volunteer weather spotters
- Reports many forms of significant or severe weather
- Trained by the NWS
- Roots in Amateur Radio

Who Can Be A Spotter

- Amateur Radio Operators (SKYWARN)
- Emergency Management Officials
- Firefighters
- Law Enforcement Officials
- Rescue Workers and EMTs
- Media
- Researchers
- Students
- General Public
- Storm Chasers
- COOP/CoCoRaHS

Anyone

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What does a Spotter Report

- ✓ *Primary purpose is severe weather.*
  - ✓ Funnel clouds/Tornado, wind damage, hail, flooding, heavy snowfall
- ✓ *But it can be anything!*
  - ✓ We have a number of spotters who report rain and snow to us after an event and that's it.
  - ✓ The level of involvement is entirely up to you.
  - ✓ Know that we appreciate whatever you're willing to relay, but you're not obligated.

Heavy Rainfall: 1" an hour or greater or any flooding

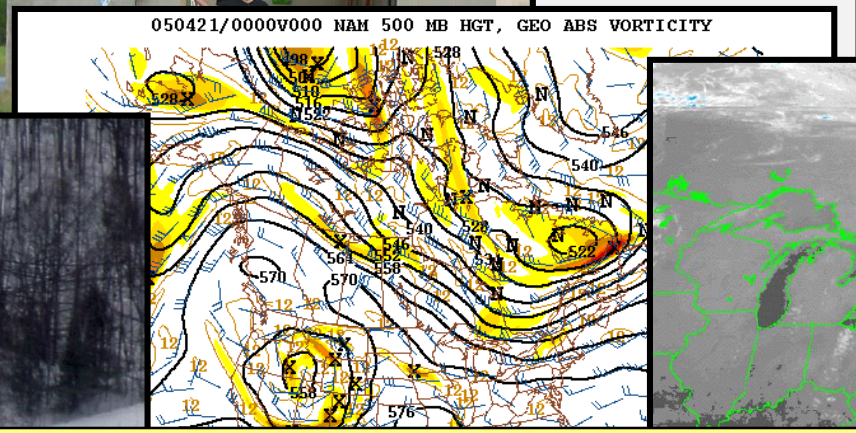
Reporting Methods

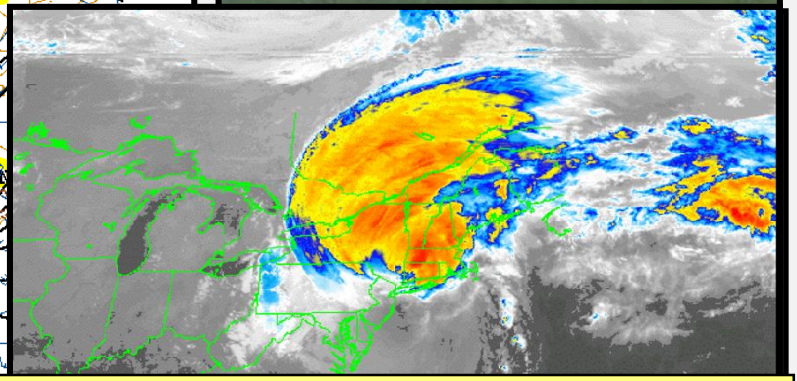
- Be as specific as possible! We may not be as familiar with your roads/cities.
- Reference nearby intersections, landmarks, or even your latitude/longitude to help us pinpoint where active weather is occurring.

- And of course – remember when (So we can match to radar)!
- Is it over, how long did it last?
- Let us know who you are

Why Do We Need Spotters

- ✓ We use all kinds of methods to make weather observations.
  - ✓ *Surface Observations*
  - ✓ *Upper Air Observations*
  - ✓ *Computer Models*
  - ✓ *Satellite Imagery*
  - ✓ *Radar*





But they all have limitations

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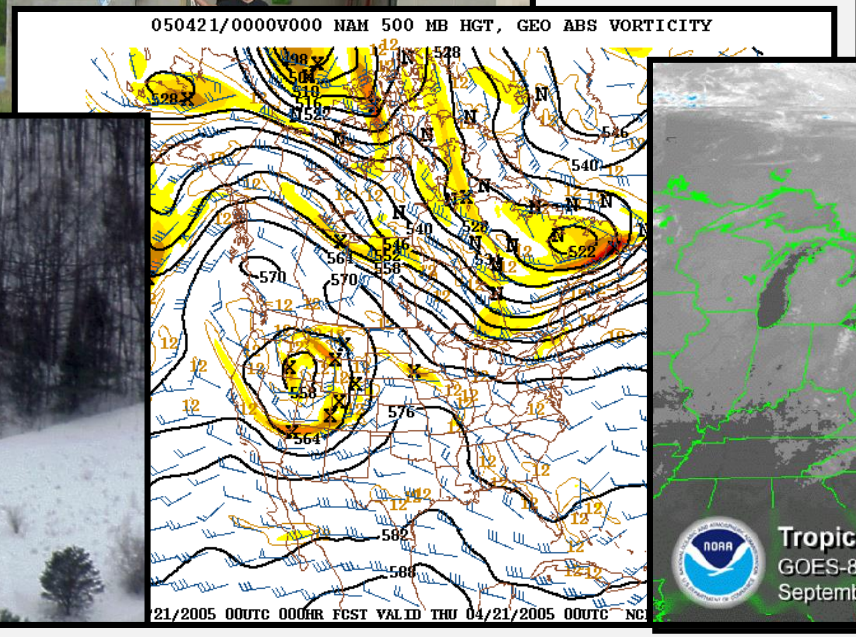
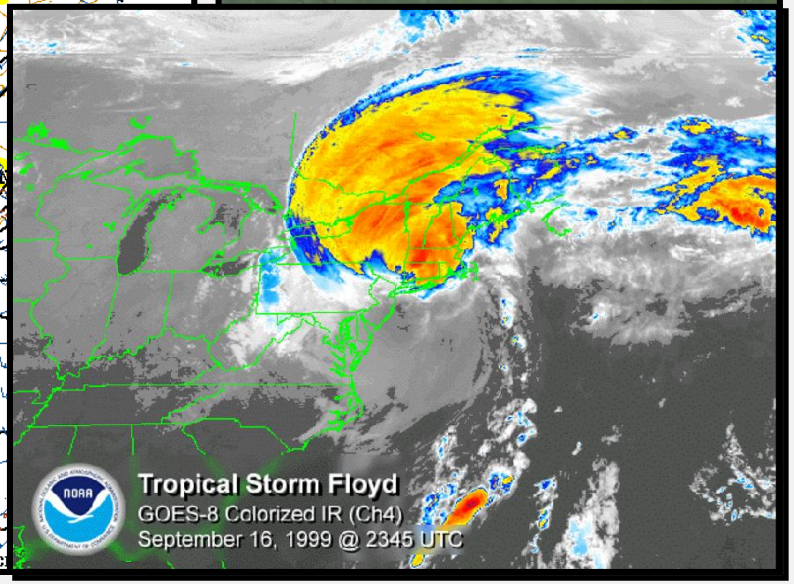
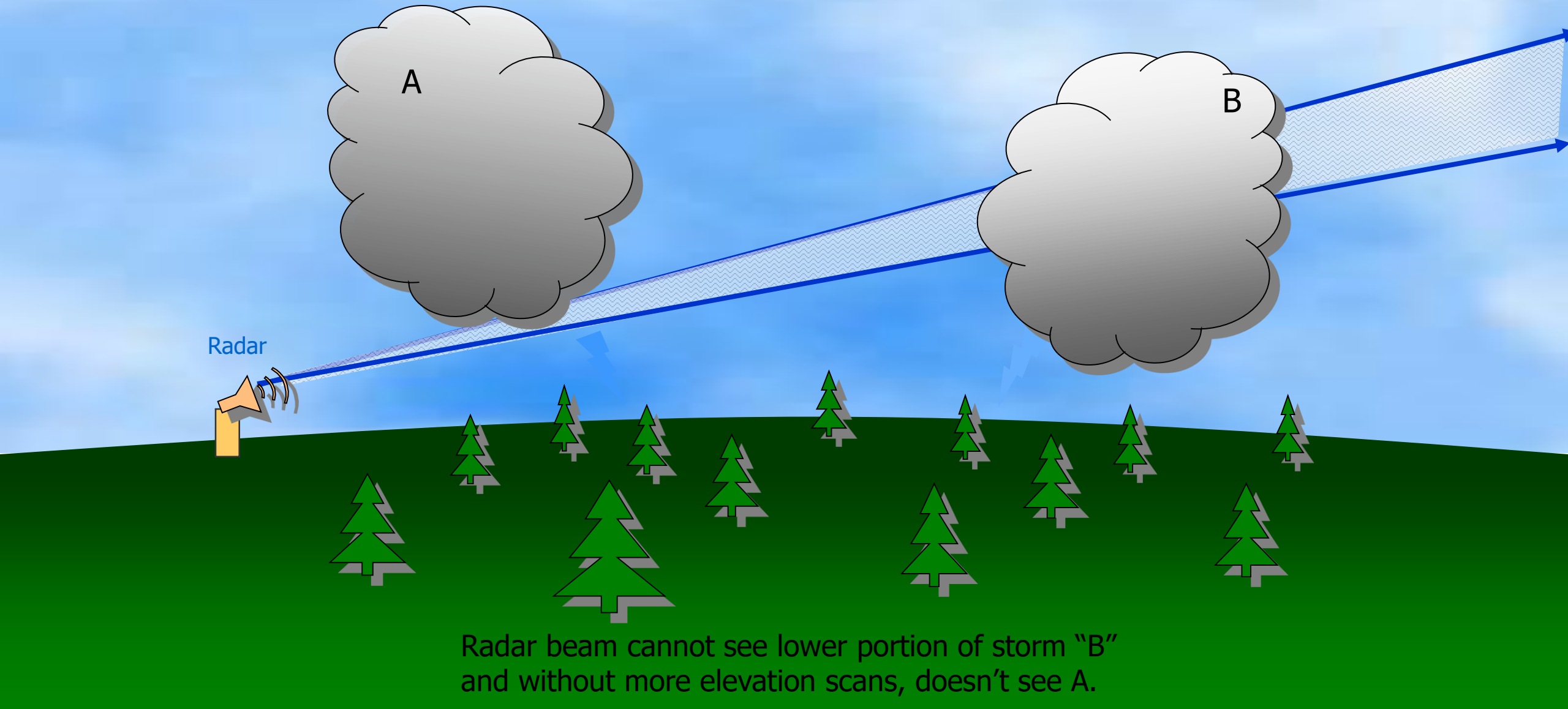




Example of Radar's Limitations

Radar Horizon



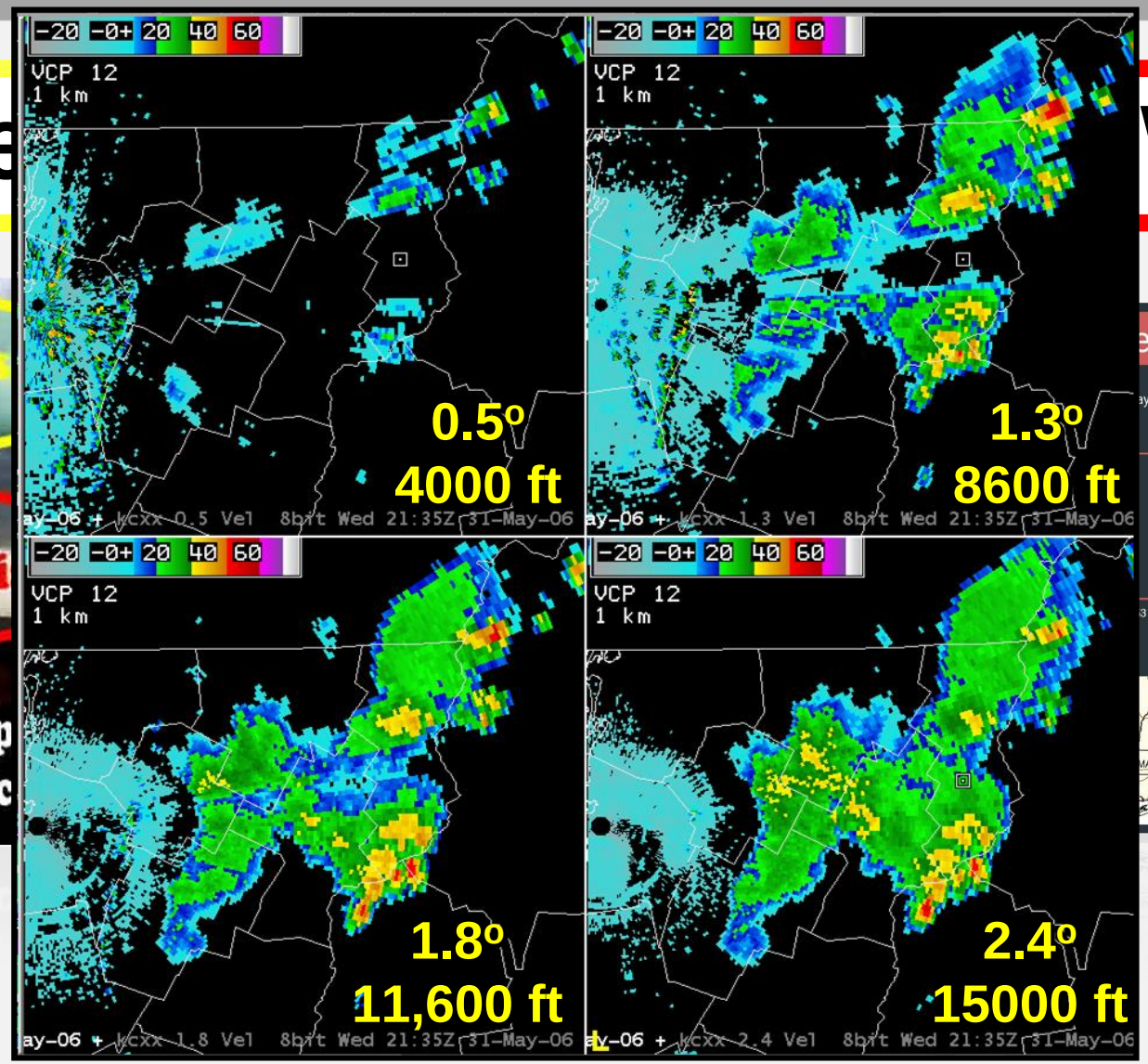
Radar beam cannot see lower portion of storm "B"
and without more elevation scans, doesn't see A.

1
1

Why Do We Need Spotters

Observe

Warning



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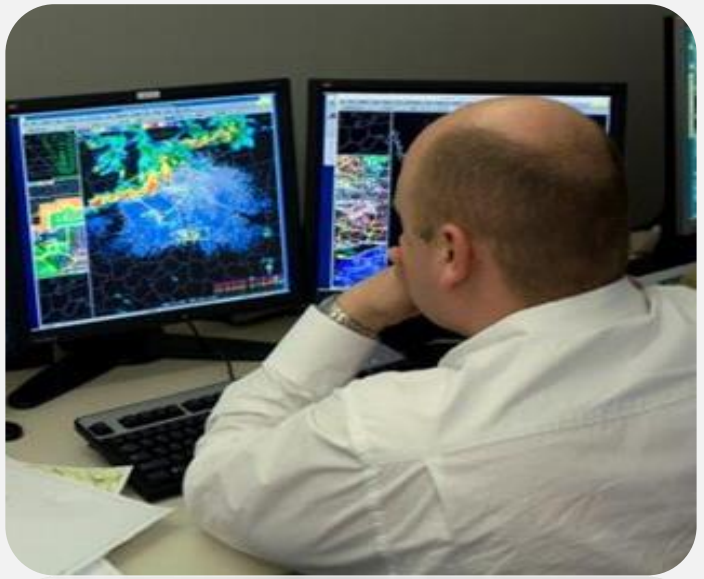
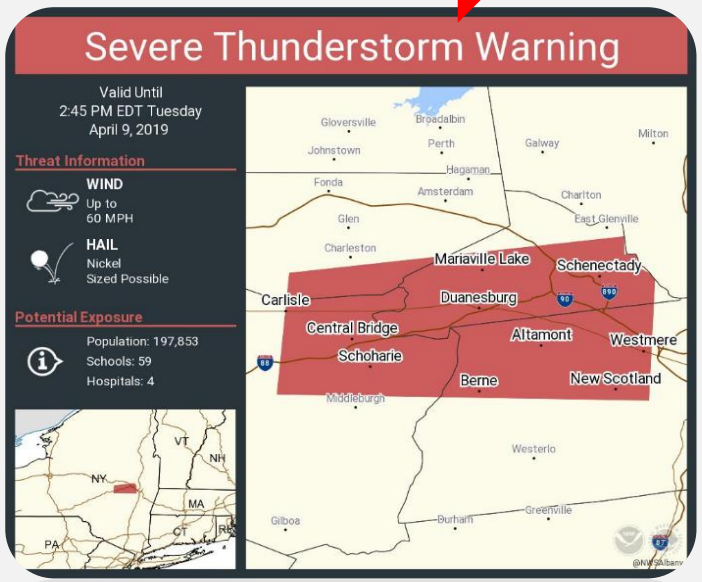
Why Do We Need Spotters

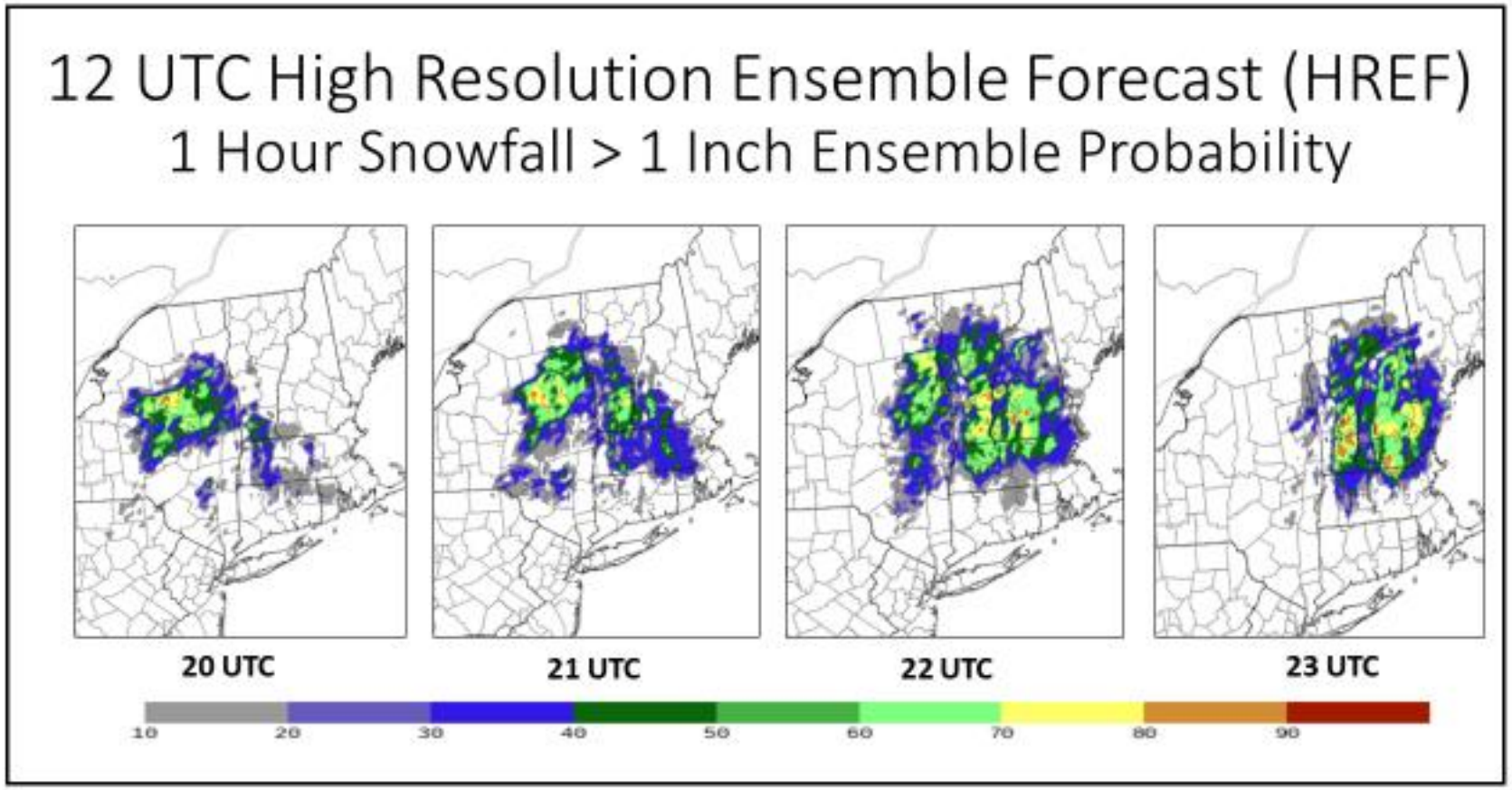
Observe → **Report** → **Warning**





Why do we need spotters?

March 23, 2020 – Heavy Snow



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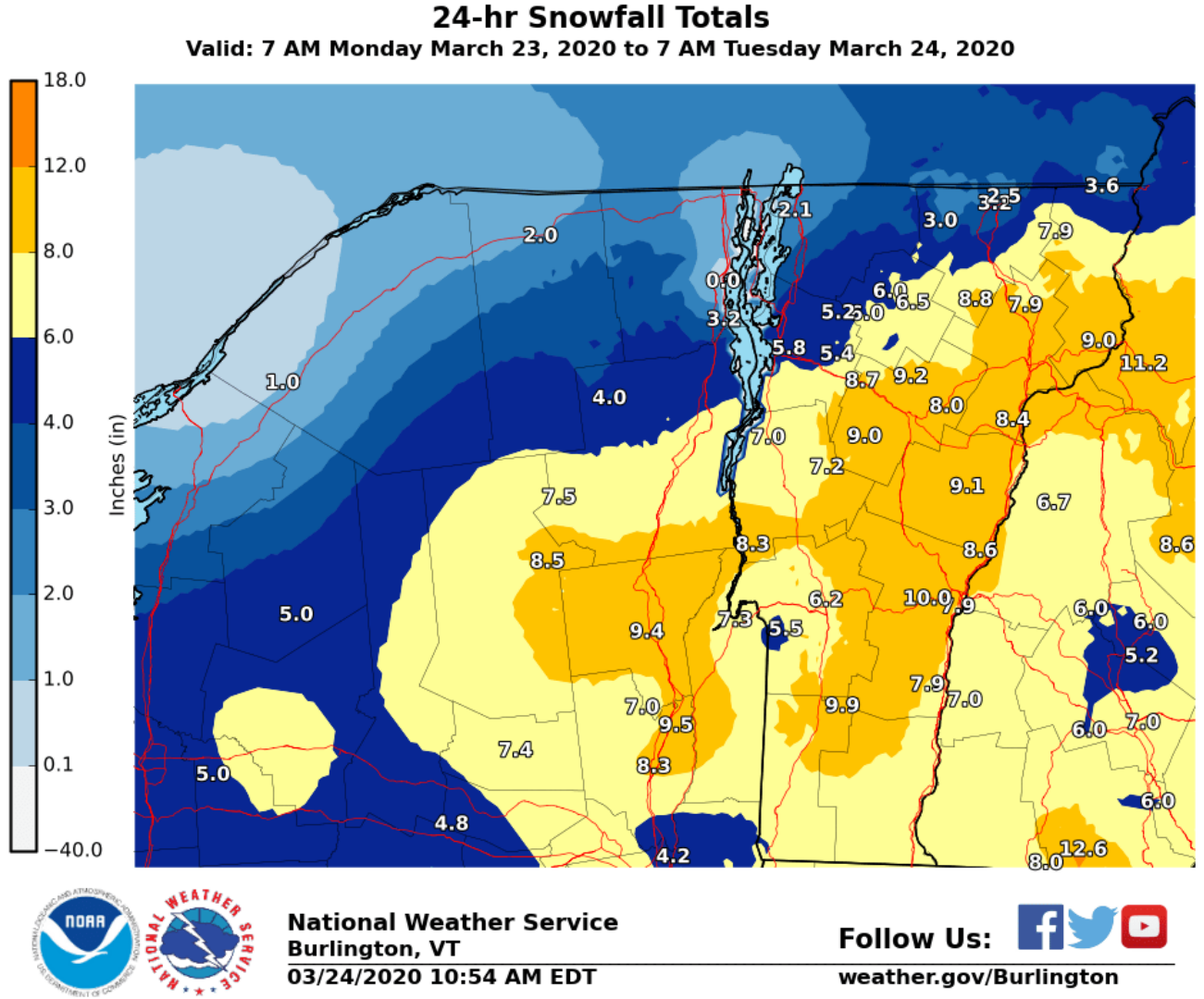

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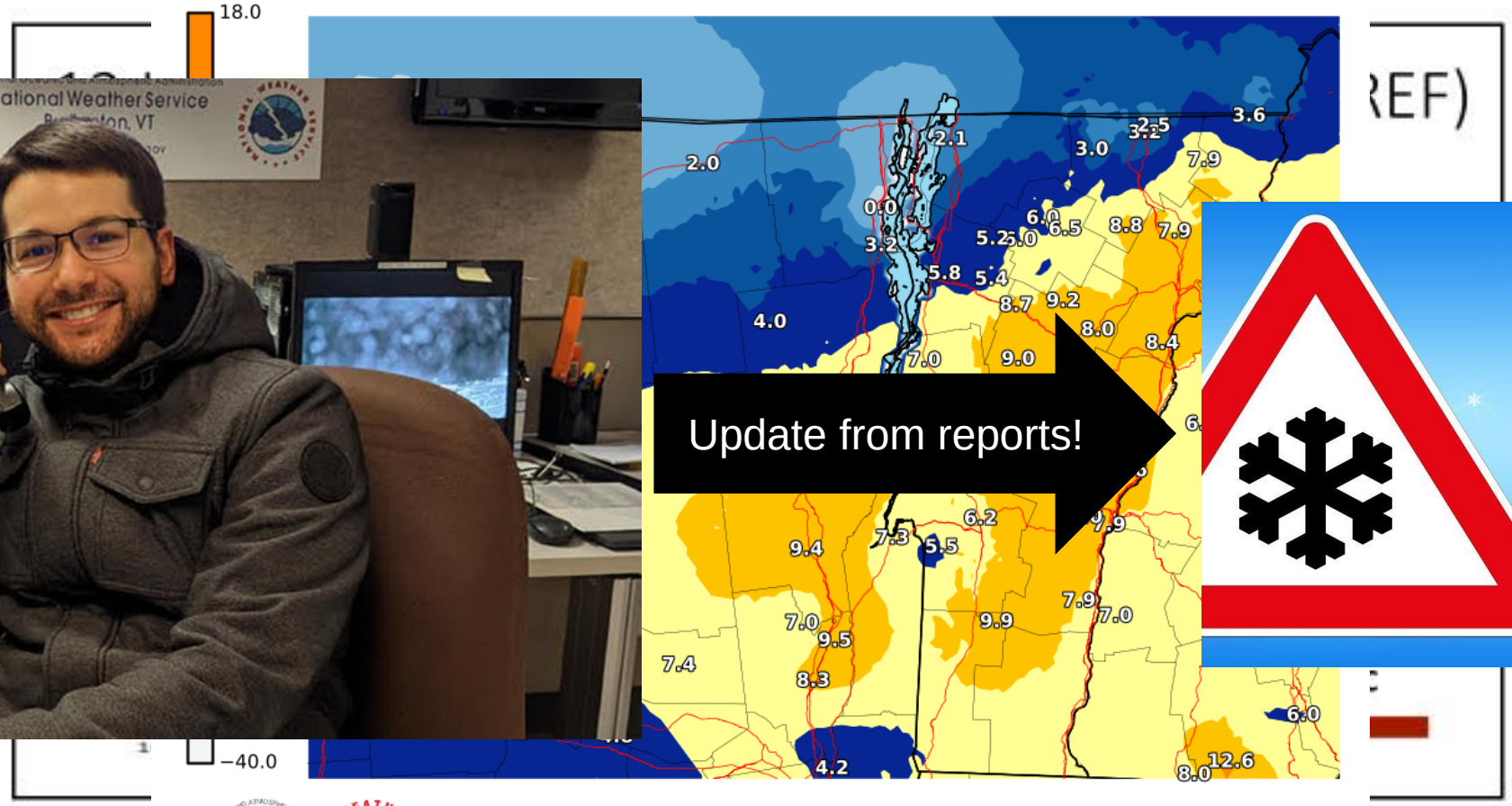
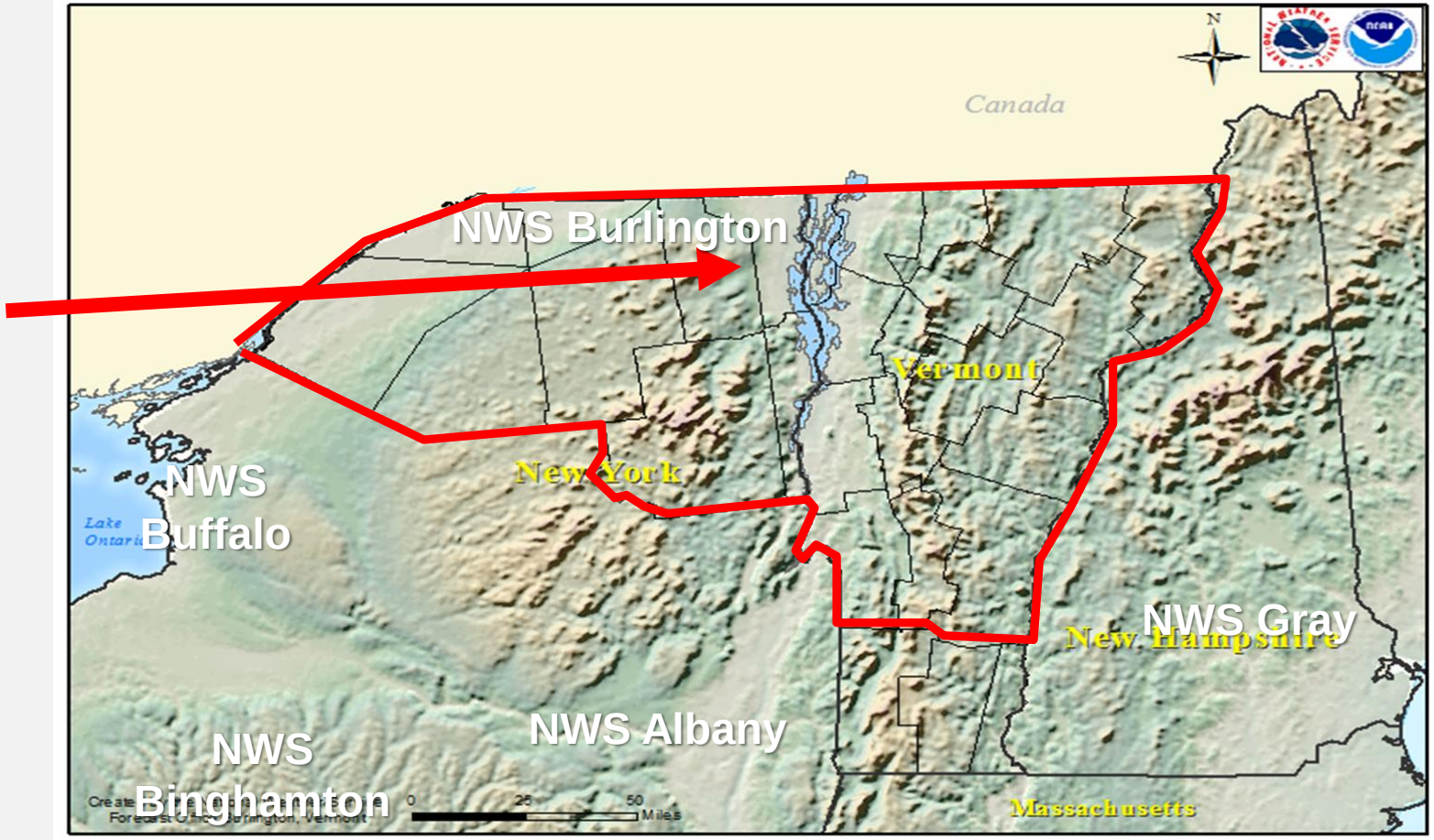


How To Become A Spotter

- ✓ There are no membership fees – It is completely free.
- ✓ We only ask that you are trained by a forecaster from the National Weather Service through any of the following:
  - ✓ *Through an in-person Spotter Talk or Presentation.*
  - ✓ *Through a virtual course – like the one you're participating in now.*
  - ✓ *Through a COMET/MetEd Course - https://www.meted.ucar.edu/training_course.php?id=23*
- ✓ If you move, we encourage you to contact the region's local National Weather Service.
- ✓ Upon completion, we ask for a physical location (latitude/longitude or address) and a contact number you commonly use. We may contact you if we notice a storm moving near your area! (But you can let us know if that is not preferred.)

Where Do We Service?

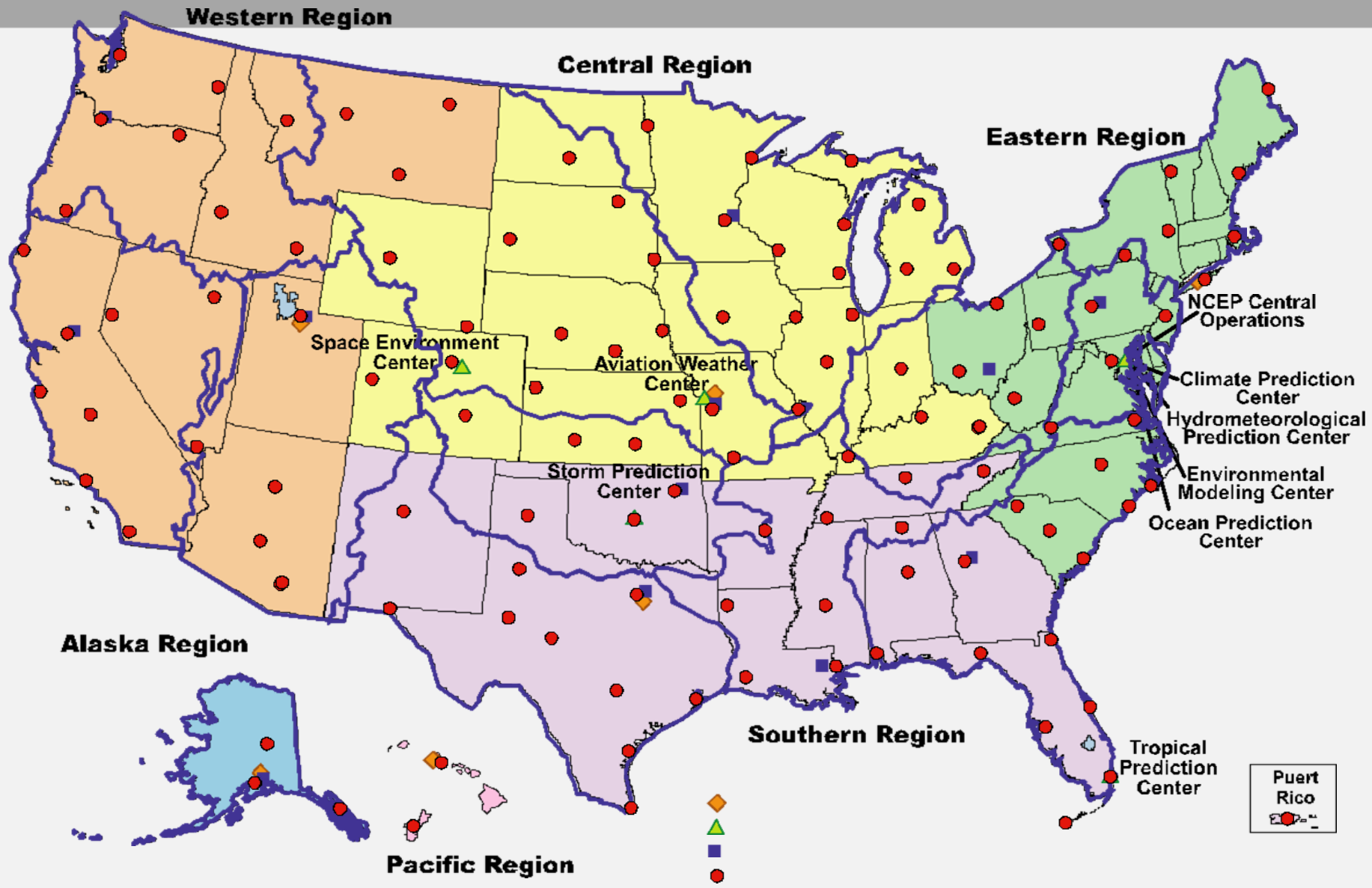
We service all of Vermont, except Bennington and Windham Counties and the 4 northernmost counties of New York.



What Does the National Weather Service Do?

- 24/7/365 Operation - Weather never stops, so we don't either.
- Routine duties - issue weather warnings when warranted
- Take & provide weather/climate observations
- Produce weather forecast information for public and partners to access
- Public Service – Answer the phones
- Community outreach, Tours, Awareness Campaigns, Weather Spotter training
- Work with many local, state, federal based groups
- Emergency Managers, City Officials, Red Cross
- FAA, USGS, Forest Service
- Local/Regional Media
- Universities

Structure of the NWS



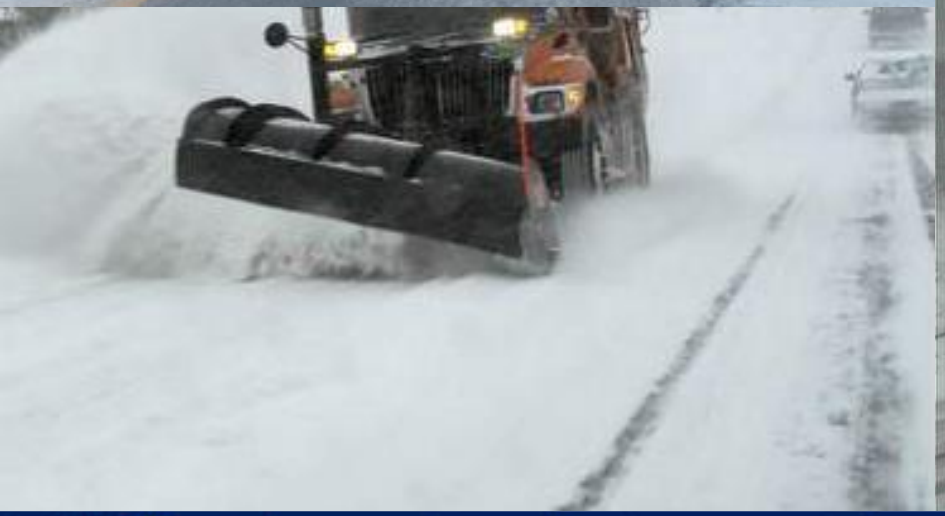
Review Questions

When you report weather, what information should you include?

- **What happened (hail, damaging wind, tornado, flooding)**
- **When did it happen (helps us match to radar!)**
- **Where did it happen (be as specific as possible!)**
- **Who you are and what's your name (helps us double-check the Spotter network. We have many spotters, and we don't know all of you by name)**
- **How long it lasted (May be most important with hail and snow)**

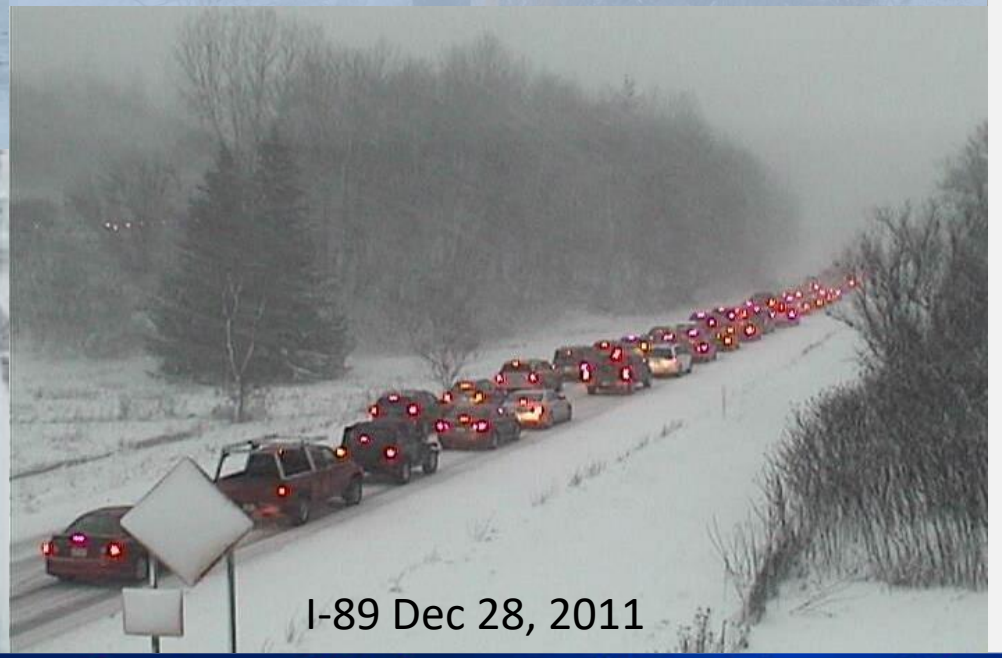
Questions?


VT Roads – Williston on February 7, 2020



Injuries Due to Ice and Snow:

- About **70%** result from vehicle accidents.
- About **25%** occur in people caught out in a storm.


I-89 Dec 28, 2011

Winter Driving Hazards

Keep a winter storm kit in your car in case you get stranded.

Recommended supplies include:

Injuries Due To Ice and Snow:

About 70% result from vehicle accidents.

About 25% occur in people caught out in a storm.

Blankets / Extra Coats

Non-Perishable Foods

Shovel

Flares

Bag of Sand

Tire Chains

Windshield Scraper

Flashlight

Jumper Cables

1 Snow or ice totals can vary greatly over short distances

A heavy snow band may form, dropping more snow in one location while significantly less snow falls just a few miles away.

2 Winter forecasts can change frequently

Forecasts may change as new model data becomes available. Always check weather.gov for the latest information.

3 Focus more on the winter storm's impacts

Don't focus too much on exact numbers, and consider the full range of possibilities.

4 Know your winter weather terminology

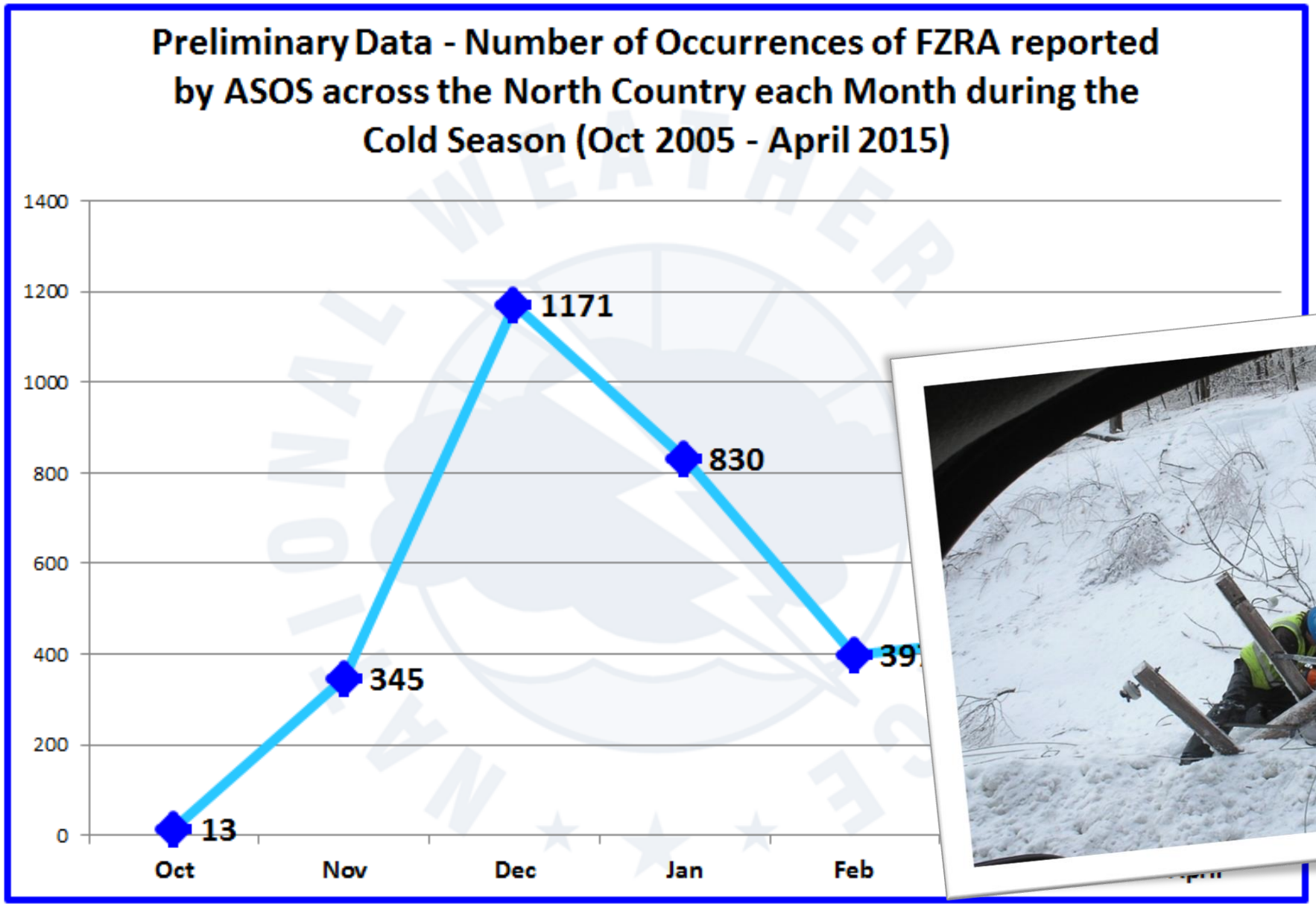
If a Watch is issued, get prepared for hazardous weather. If a Warning or Advisory is issued, take action – hazardous weather is occurring or will occur soon.

5 Rely on a dependable source for weather info

Choose your information sources wisely, and follow a name or organization you know and trust.

For more information on winter weather safety, visit:
weather.gov/winter

North Country Climatology – Monthly Frequency



Ice Jams at the Season Shoulders

Freeze-Up Ice Jams

- Occurs early in the season following the first cold snap
- Especially if daily average temperatures will be under 0 °F several days.

Break-Up Ice Jams

- River rises greater than current ice thickness
- 12 hours of thawing, with at least 6 hours over 40 °F

Missisquoi at East Highgate 02/13/2009

Jan 1, 2007 Freeze Up Jam in Montpelier

Feb 12 2009 Montgomery

Rte 118 West Hill Brook

Feb 2, 2010 – Ft Covington

West Hill Brook - Jan 3, 2004

Know the history of flooding in your area . Be prepared to seek higher ground if flood waters approach.

National Weather Service Burlington www.weather.gov/btv

Extreme Wind Chills

Wind Chill Chart

Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

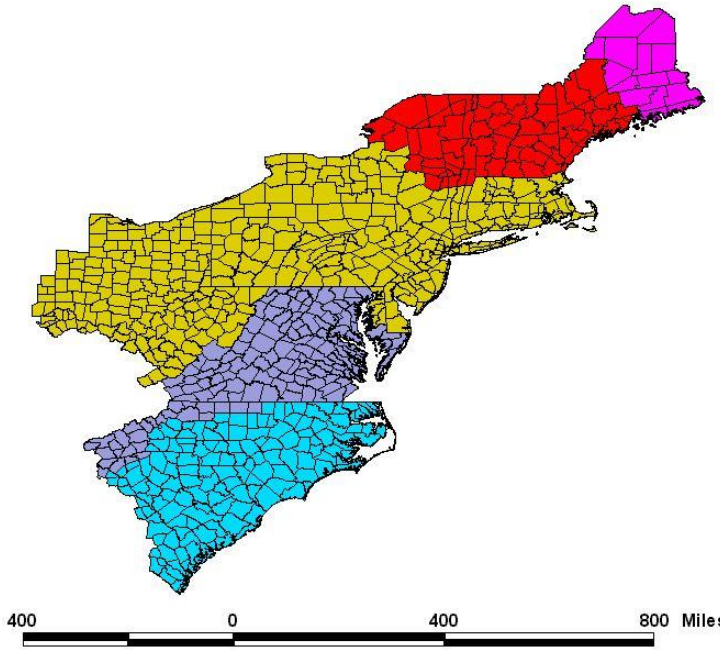
Frostbite Times: 30 minutes | 10 minutes | 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T = Air Temperature (°F) V = Wind Speed (mph)

Effective 11/01/01

Wind Chill Warning Criteria

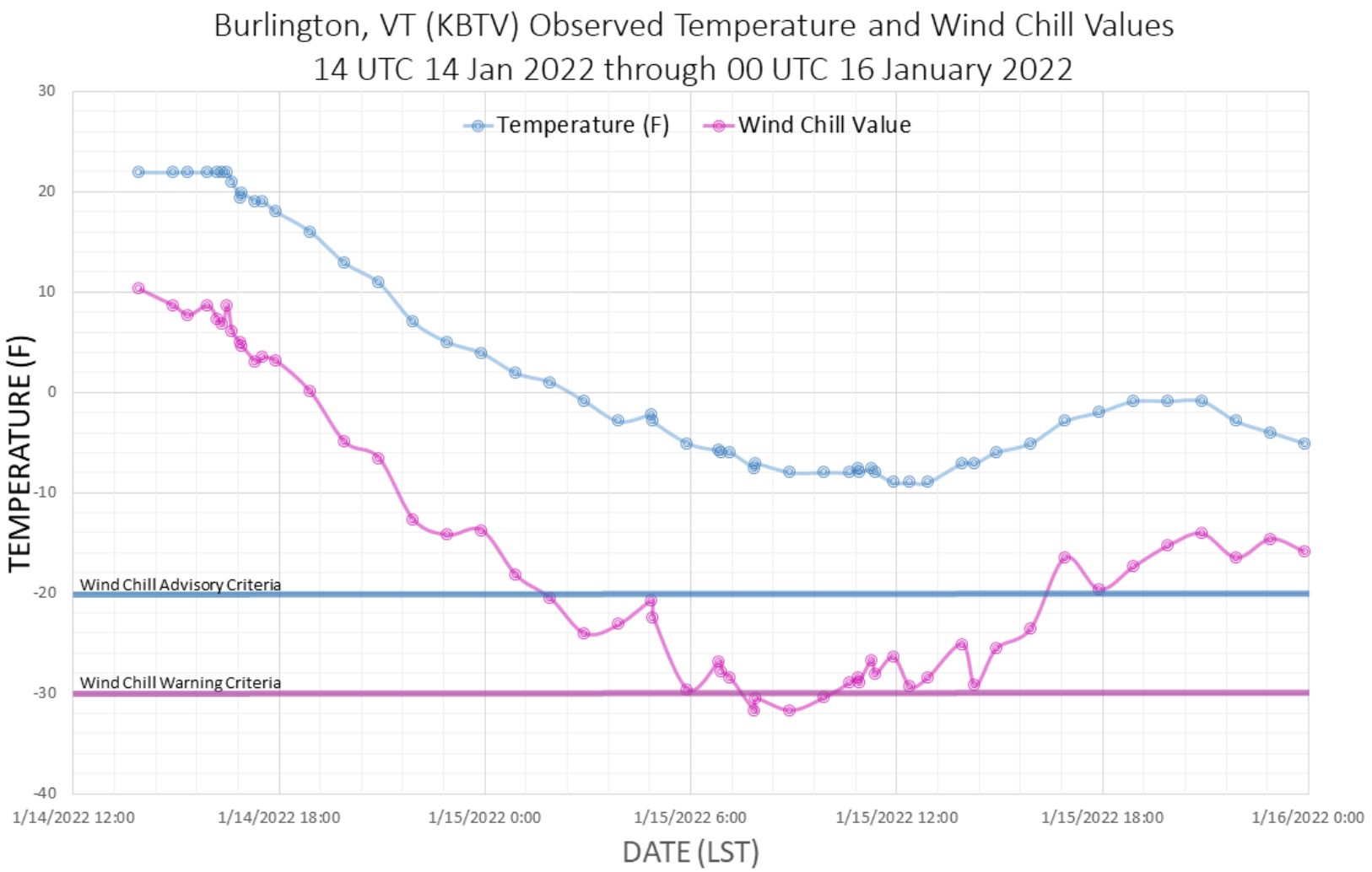


Extreme Wind Chills

Wind (mph)	Calm	40	35	30	25
	5	36	31	25	19
	10	34	27	21	15
	15	32	25	19	13
	20	30	24	17	11
	25	29	23	16	9
	30	28	22	15	8
	35	28	21	14	7
	40	27	20	13	6
	45	26	19	12	5
	50	26	19	12	4
	55	25	18	11	4
	60	25	17	10	3

Frost

Wind Chil



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-35
-30
-25
-20
-15

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The Science of Wind Chill

NO WIND

98.6°F

Average temperature of the human body

Under calm conditions, the body radiates heat, creating a layer of warmth between our skin and the cold surroundings.

WINDY

95°F

Hypothermia begins when our body temperature drops two to four degrees

But when it's windy, the moving air breaks up this insulating layer. It speeds up heat loss by whisking away the warmth from our skin.

Heat is moved away from our bodies.

weather.gov/winter

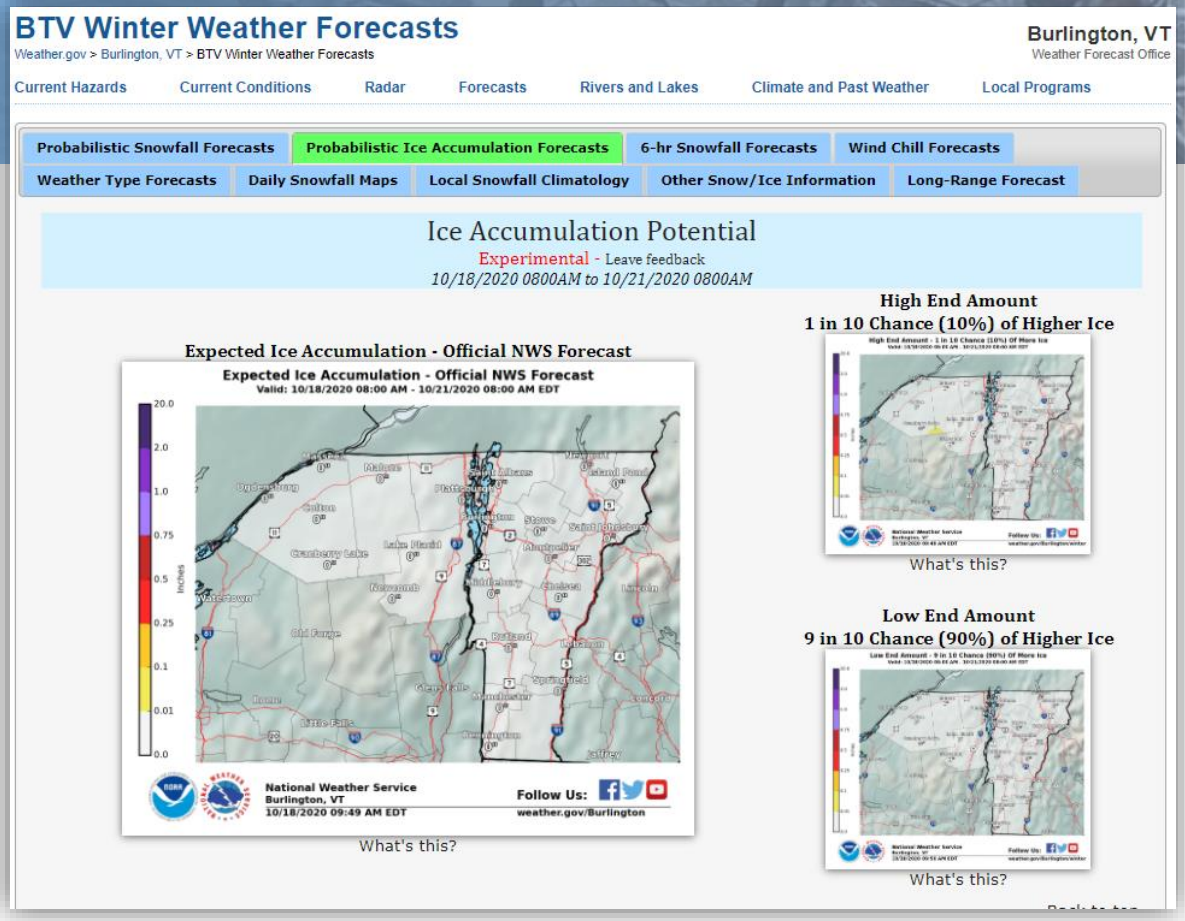
Before Winter Arrives: Preparation

At Home:

- Check your home heating system & make sure it is working properly.
  - Make sure you have a good supply of heating fuel.
- Have your chimney swept clear of soot.
- Purchase a bag of rock salt for slippery/icy sidewalks and walkways.
- If you use a snow blower, fill up your snowblower with gas.
- Replace any snow shovels if they show signs of significant wear and tear.
- Have an extra stock of non-perishable food and bottled water, extra medicine, battery operated radios, flashlights, and extra warm blankets.

All Hazards NOAA Weather Radio
NOAA's National Weather Service

Be a Force of Nature:
Prepare and Stay Safe!
#WinterSafety



Find winter forecasts at
www.weather.gov/btv/winter.

Click through the tabs for snow, ice, wind chill, and other winter related information!

Review Questions

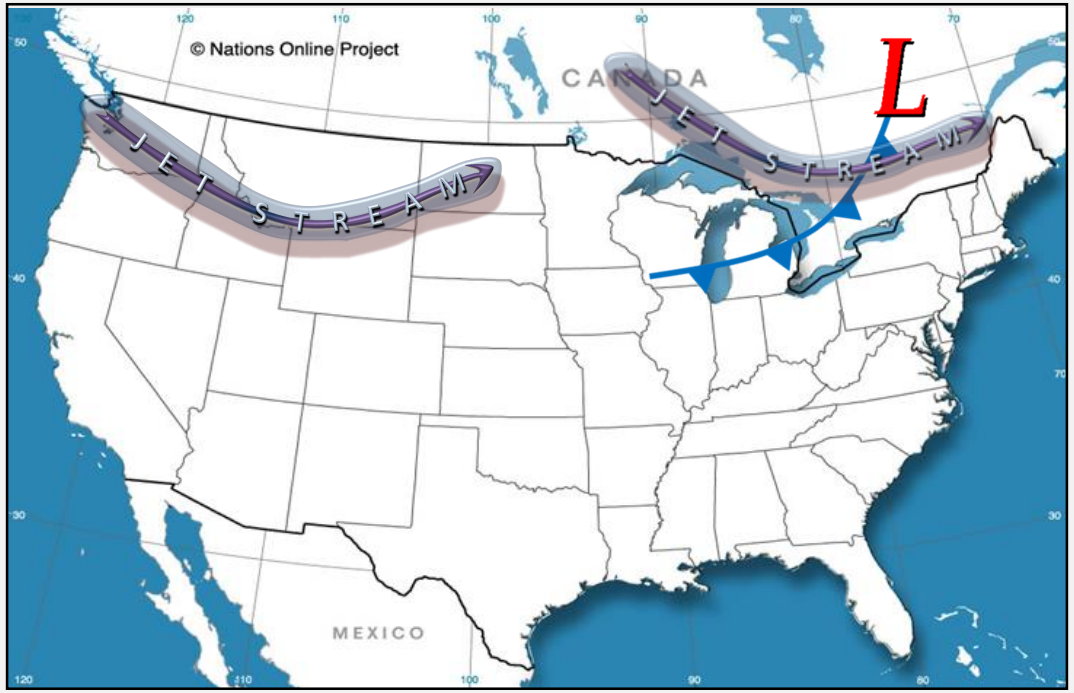
When do we typically see the most freezing rain in the North Country

- **December**

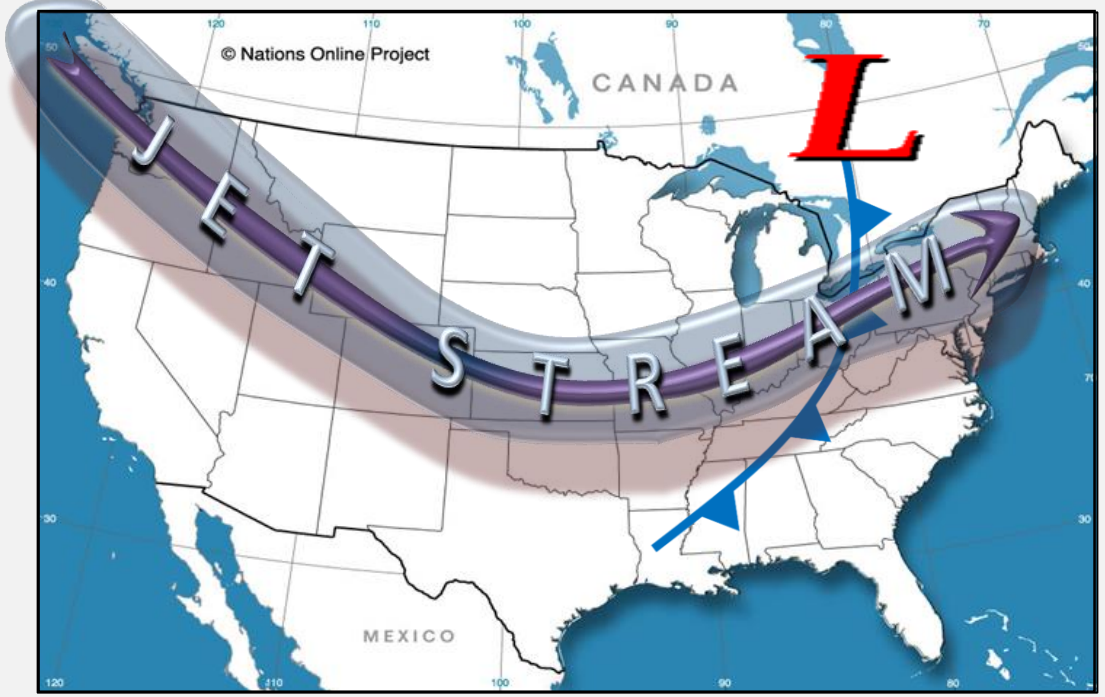
Questions?

The Role of the Jet Stream in Winter

SUMMER



WINTER



- Due to greater thermal contrasts, the jet stream is stronger in winter.
- Thus, changes in where the jet stream is located has a greater effect on our weather, making large scale patterns, like El Niño/La Niña more impactful.

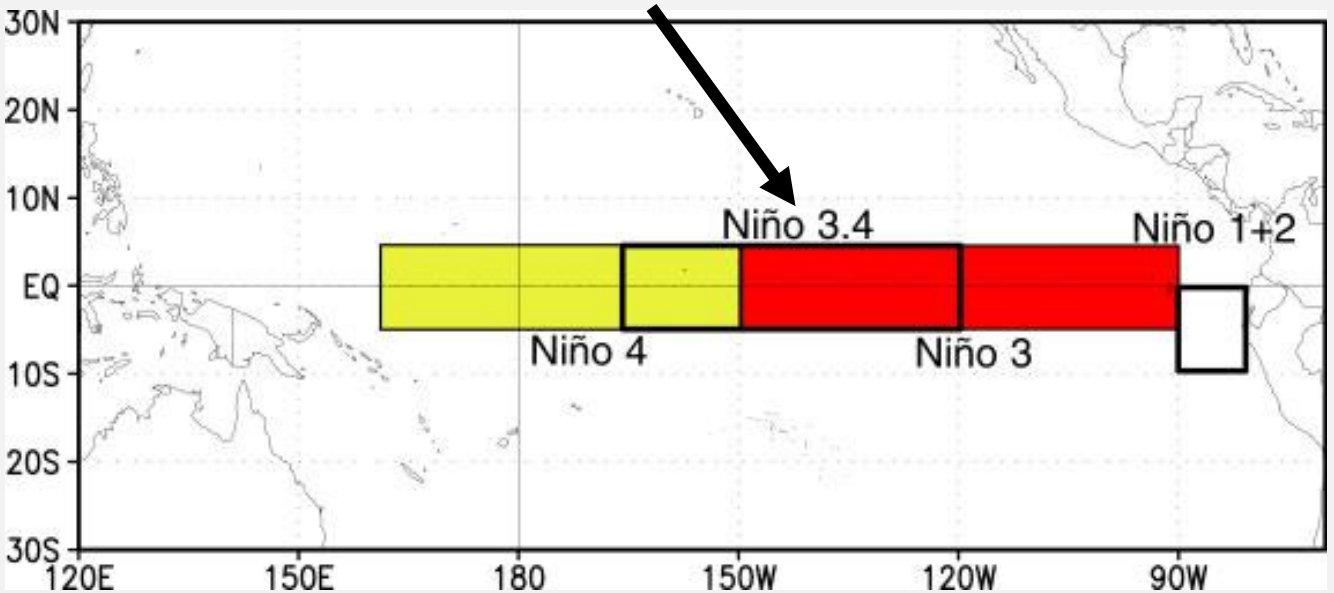
What is El Niño & La Niña

El Niño → When sea surface temperatures in the equatorial Pacific are warmer than normal, generally **above** 0.5°C for 5 three month averages.

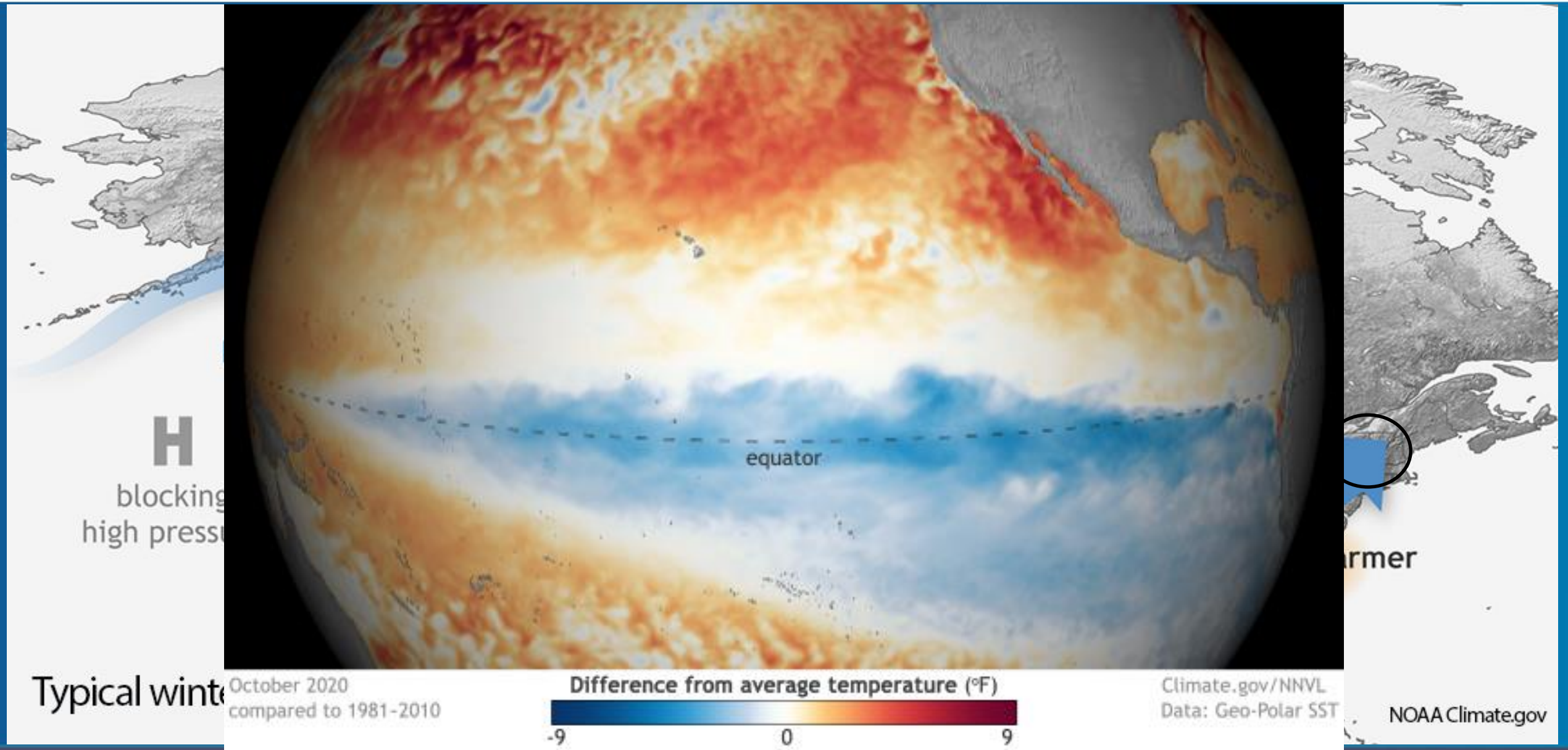
La Niña → When sea surface temperature in the equatorial Pacific are cooler than normal, generally **below** 0.5°C for 5 three month averages.

The discovery of this pattern was motivated by fisherman noticing how ocean temperatures affected their seasonal catches off Argentina. These fluctuations cycle through anywhere between 2 to 7 years.

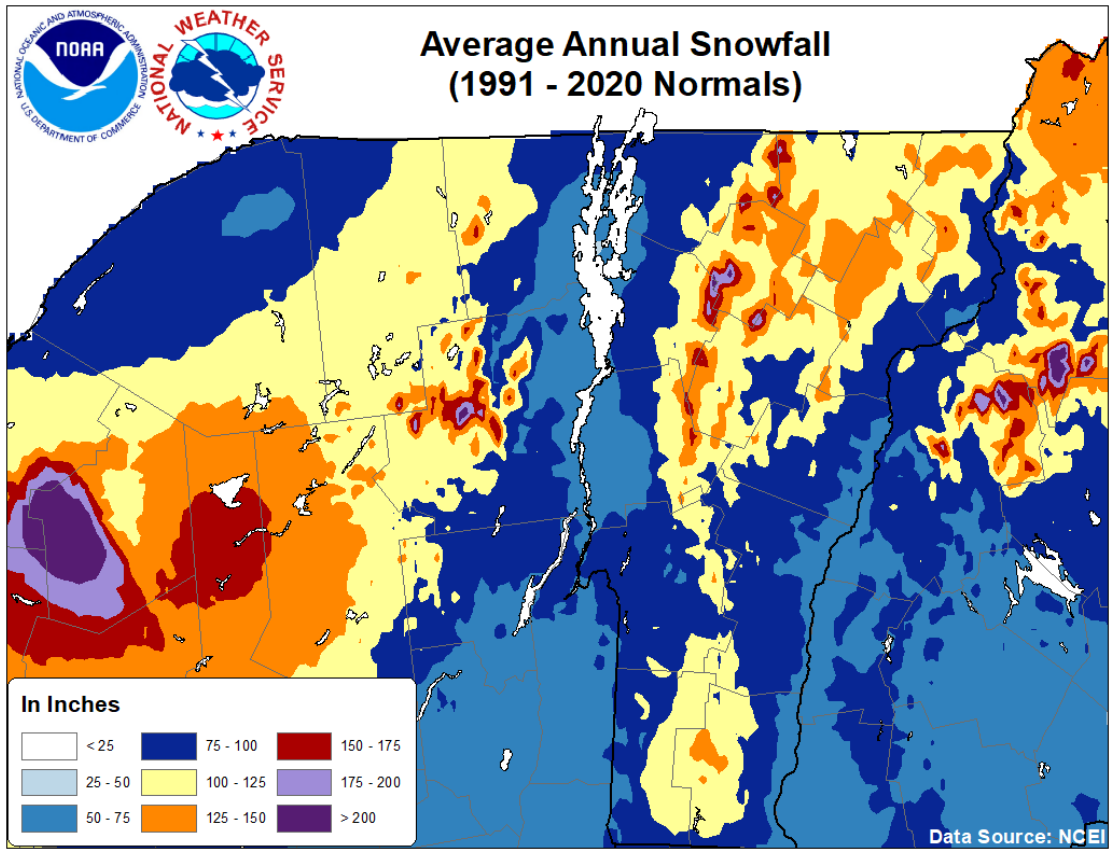
Modern day measures track the Niño 3.4 region



NOAA – Winter Forecast



North Country Winter Climatology

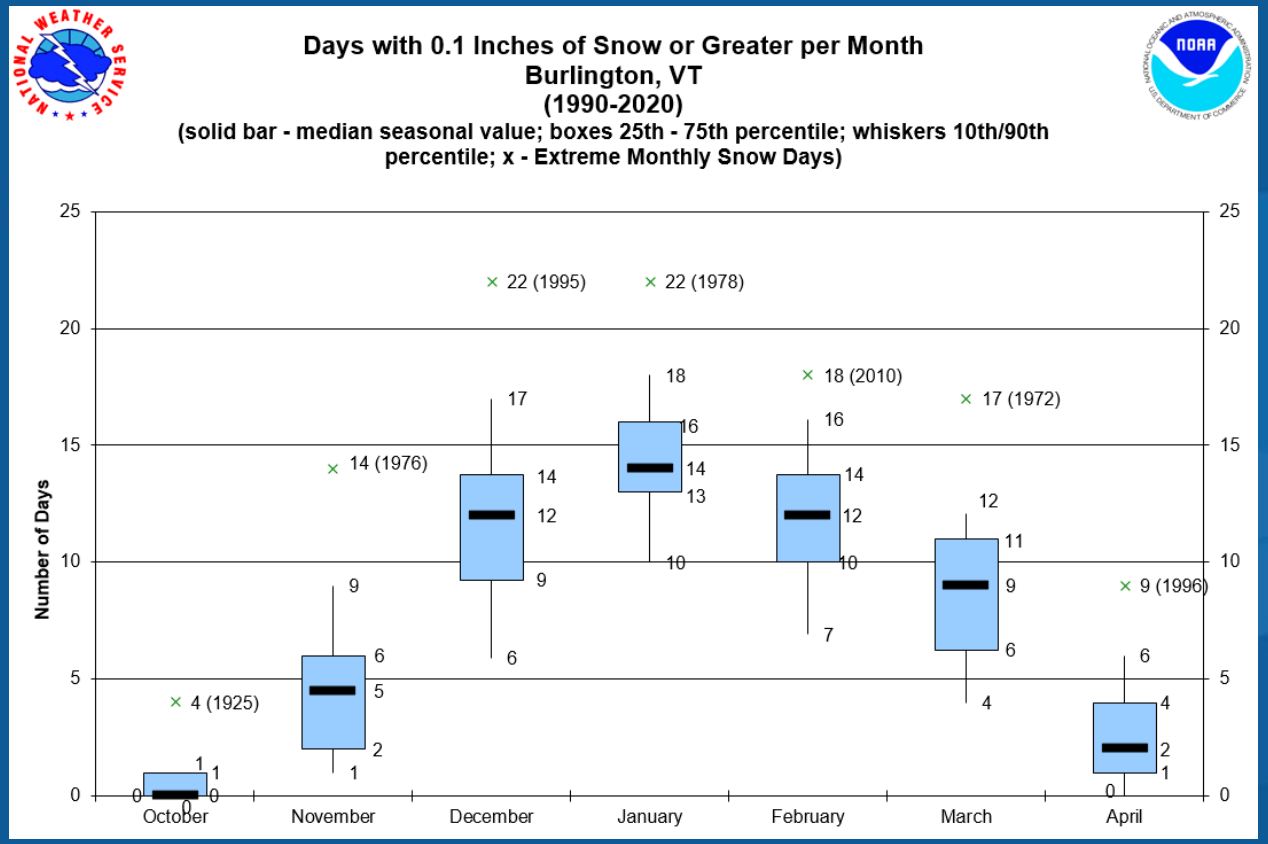


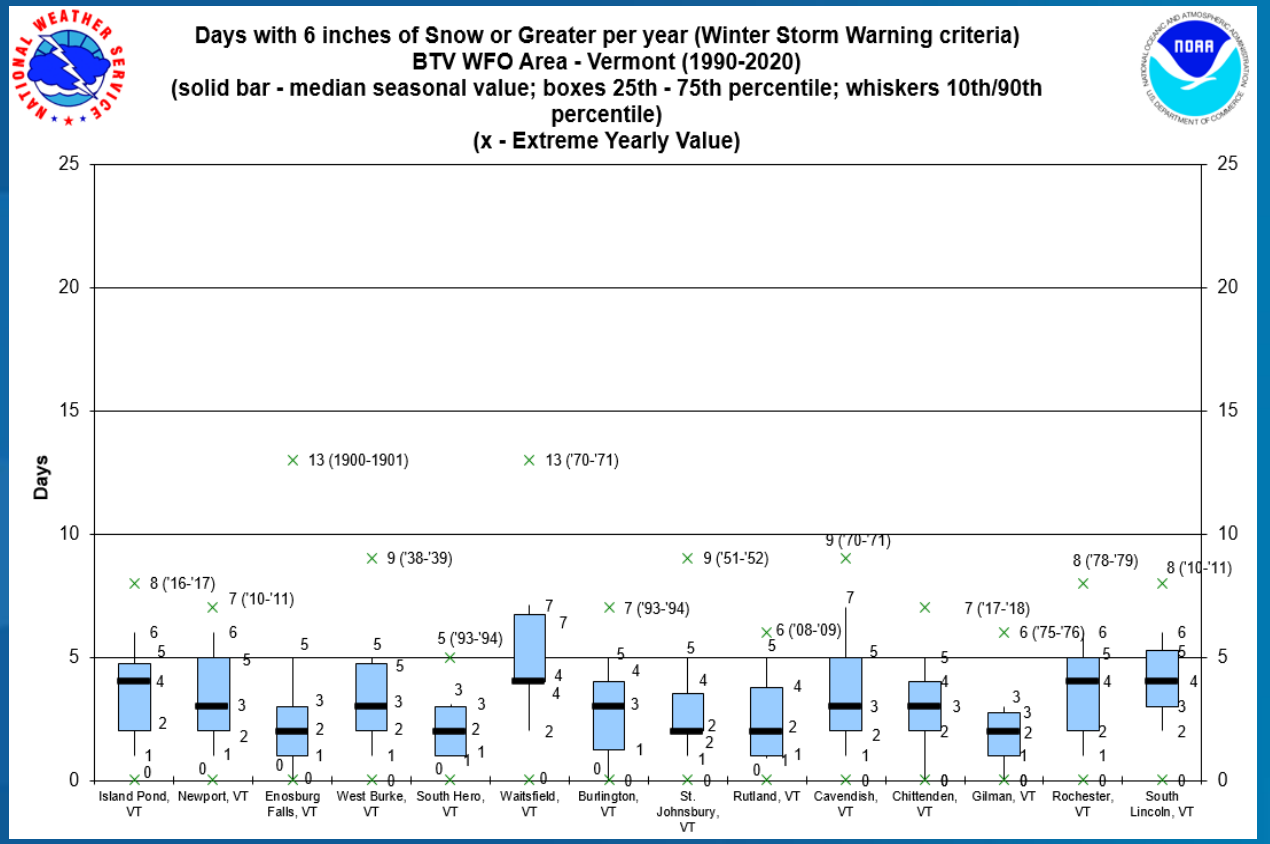
- ~50-100” in the valleys, 100” or more in high terrain.

Coldest Normals	High Temperature	Low Temperature
Burlington, VT	Upper 20s	Lower 10s
Montpelier, VT	Mid 20s	Mid single digits
St. Johnsbury, VT	Mid 20s	Mid single digits
Plattsburgh, NY	Upper 20s	Near 10
Saranac Lake, NY	Mid 20s	Near 0
Massena, NY	Mid 20s	Mid Single Digits

- Mid to upper 20s are common at the peak of the winter (late December/early January.
- Most will see single digits on average.

Number of Snowfall Days



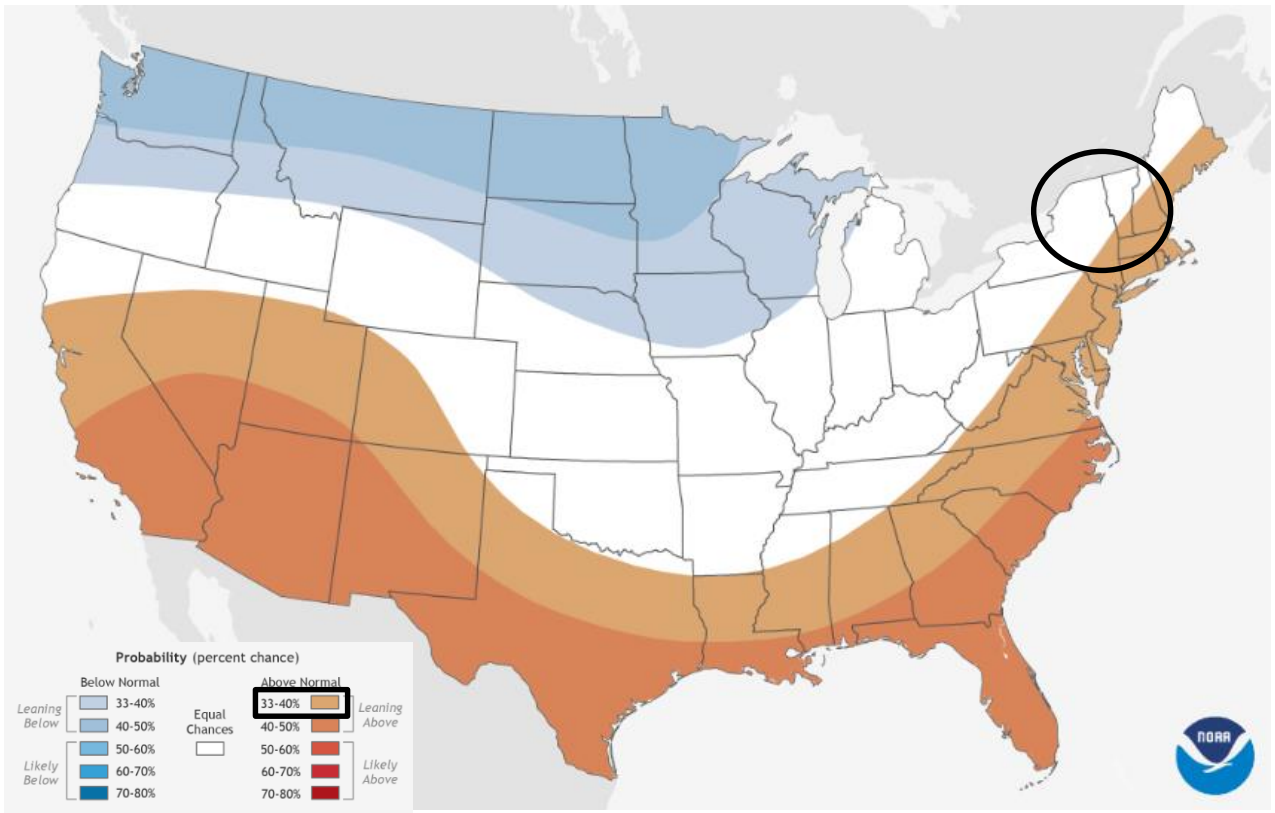


- January sees the most “snow days”
- At the extremes, we see 22 out of 30-31 days in the month with snow and as little at 5 to 6 days in a month.

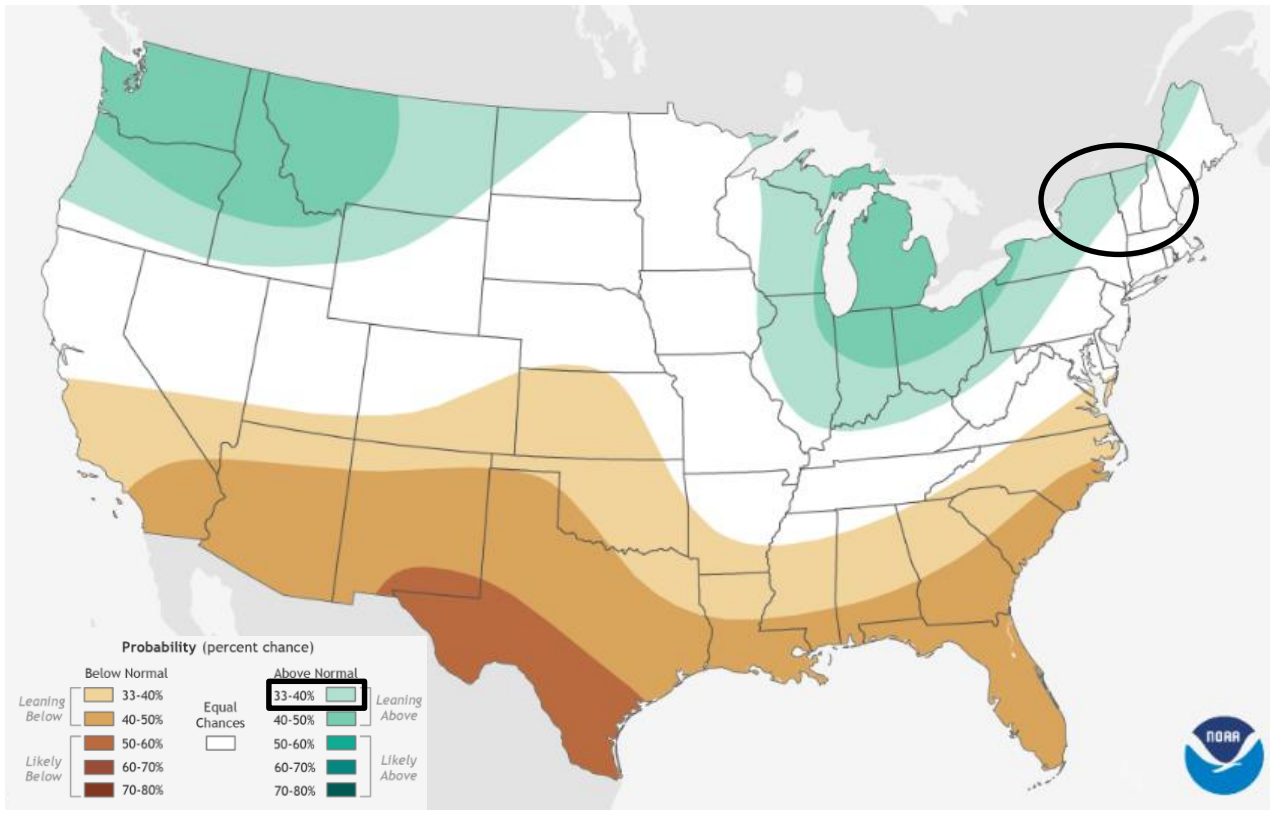
- Usually at least 2 or 3 days with above 6” of snow occurs each season.
- More active years generally see 4 or 5 days with days with more than 6” of snow.

What to Expect

Temperatures



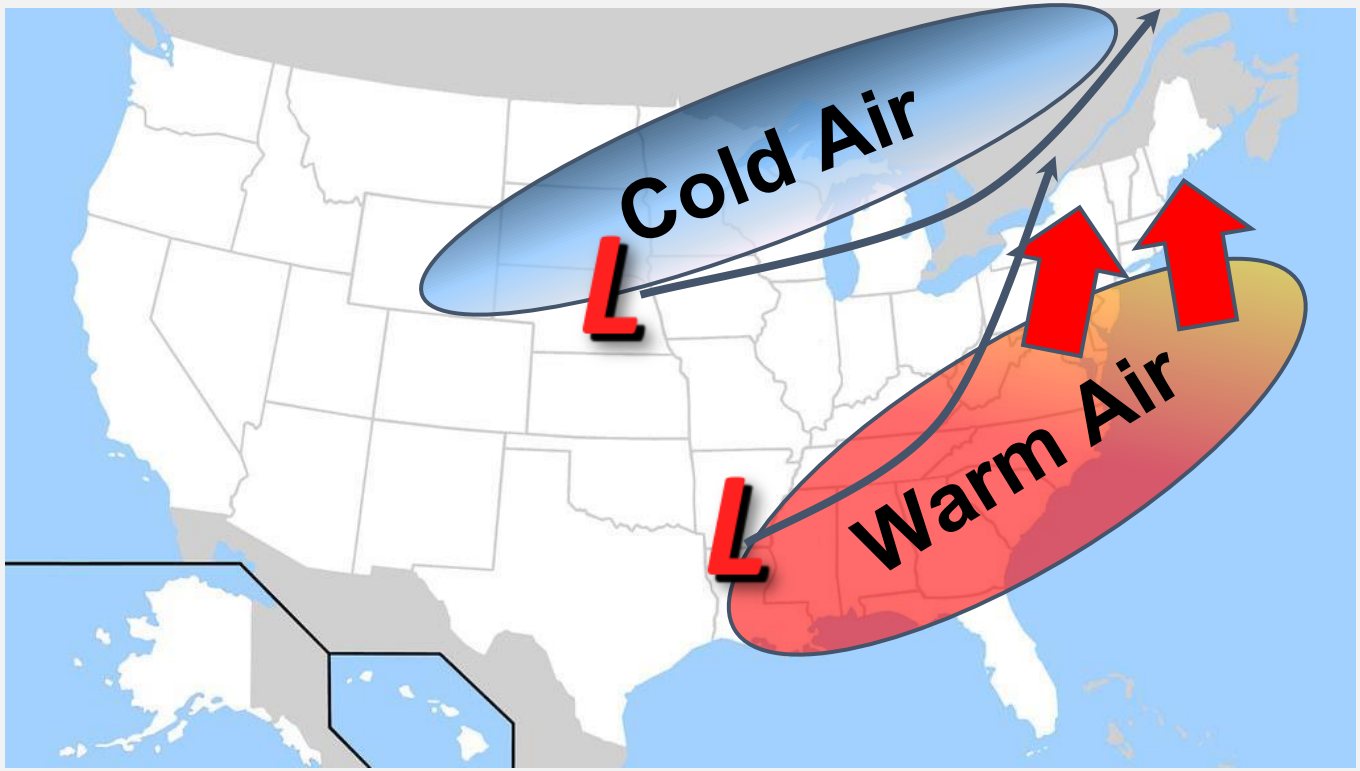
Precipitation



Questions?

Where's the Low Tracking?

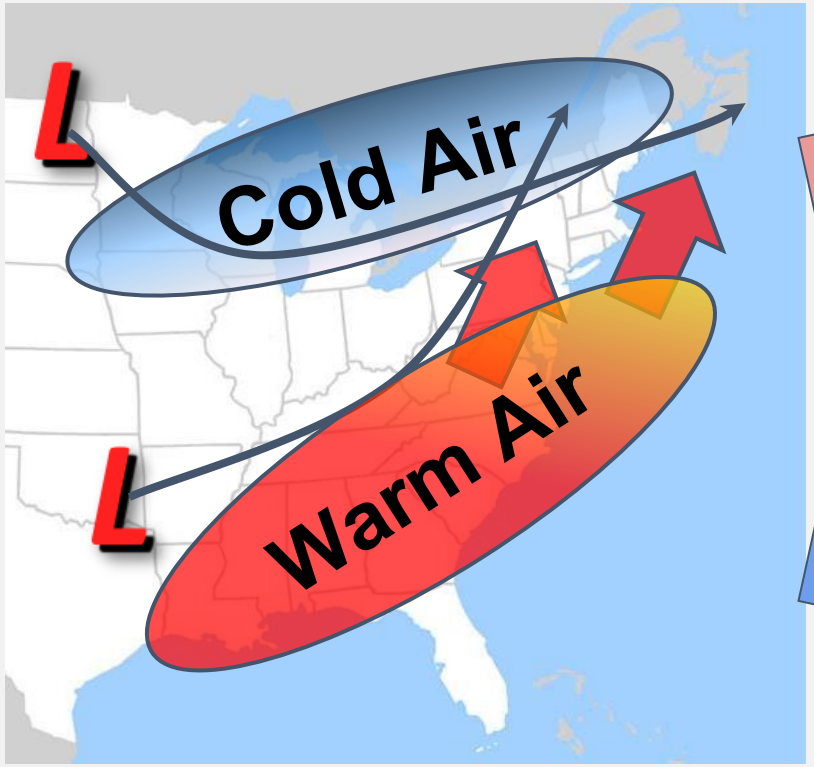
Determines wind fields, which affects whether warm air from the south lifts into our region.



If the track is well north of our region, too much warm air will limit chances for wintry weather.

Where's the Low Tracking?

We are more likely to see mixed precipitation if the low passes overhead.



Shallow cold air or warm advection is strong

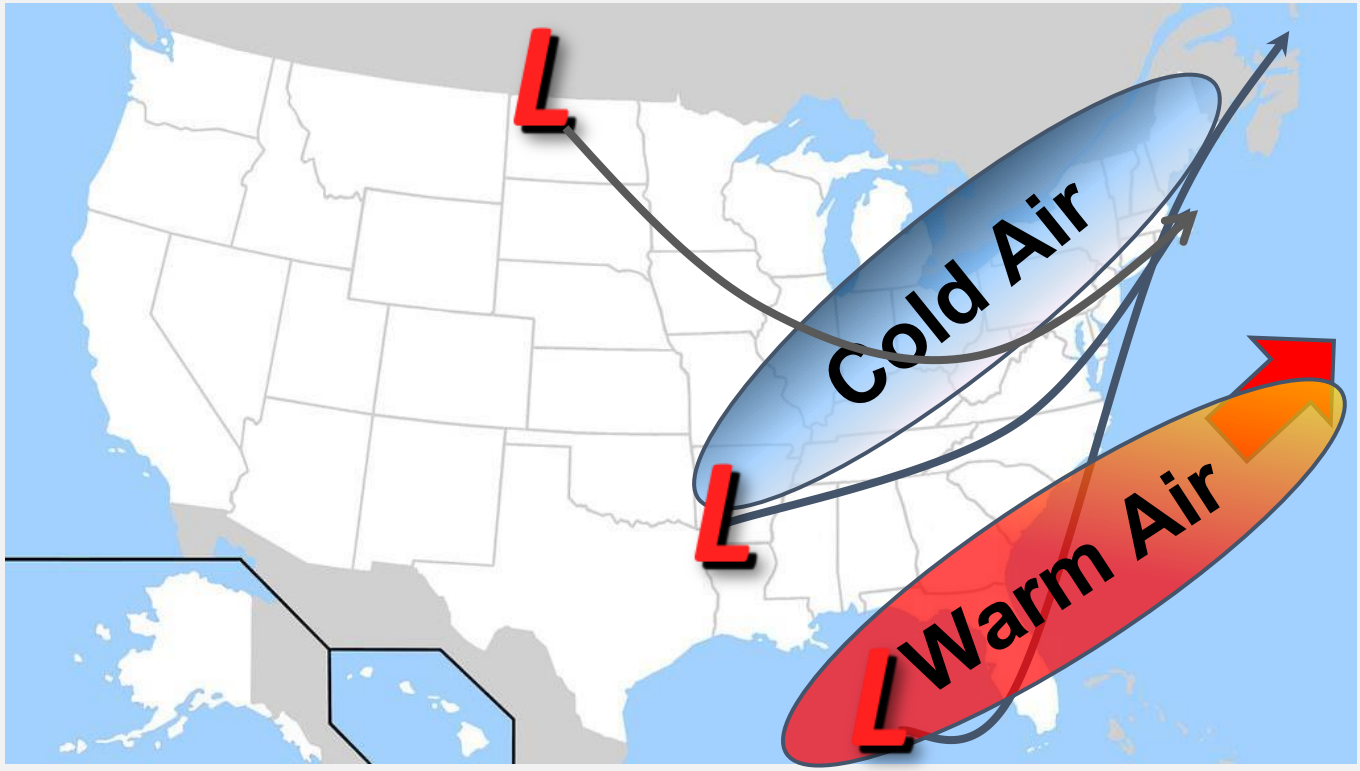
A quick transition from snow to freezing rain or rain.

Deep cold air or warm advection is weak

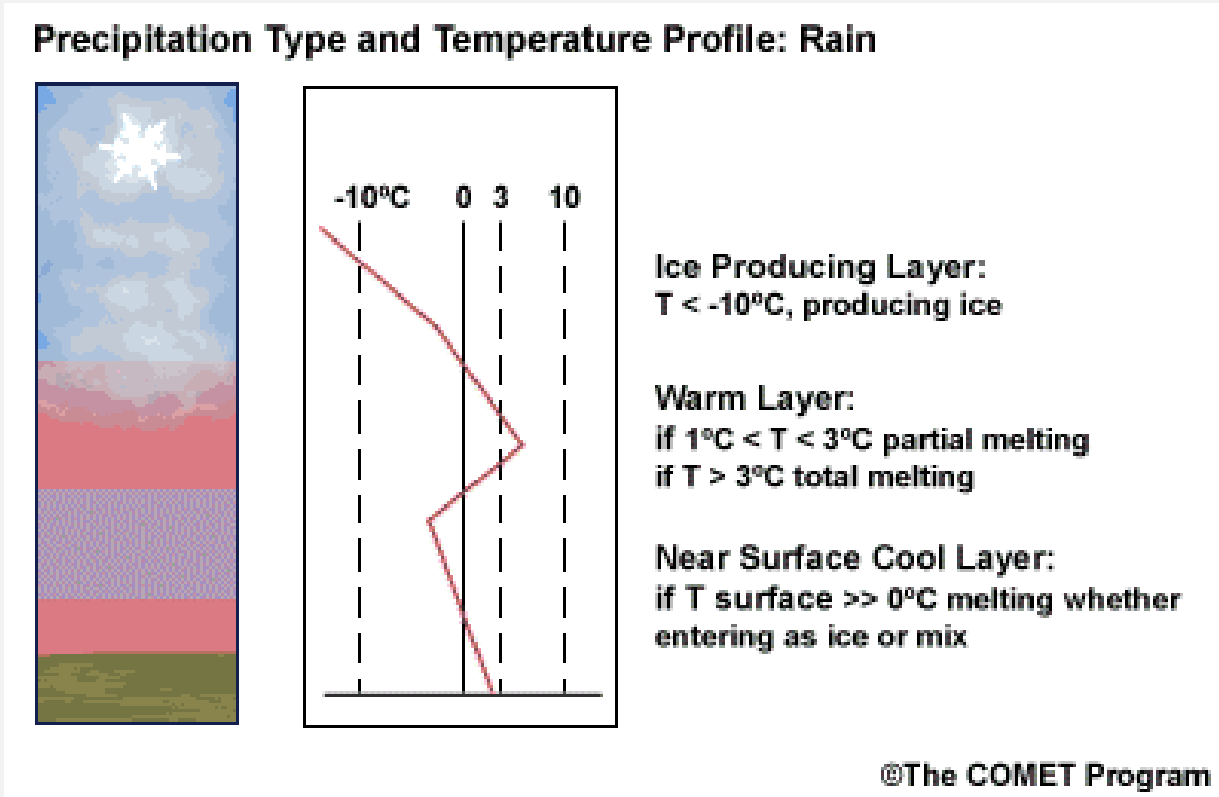
A slower transition from snow to wintry mix.

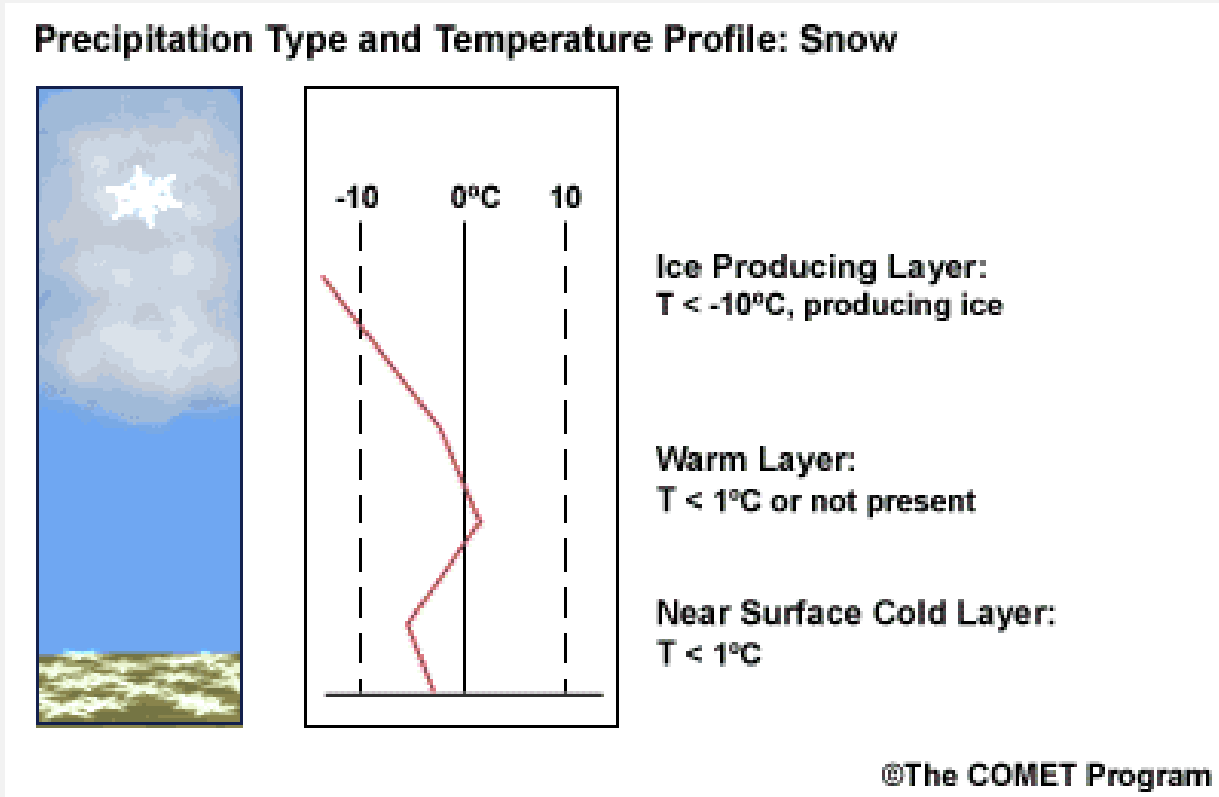
Where's the Low Tracking?

If the low tracks to our south, warm air intrusion is unlikely. Too far south, and we miss out on precipitation.



What precipitation type will it be?

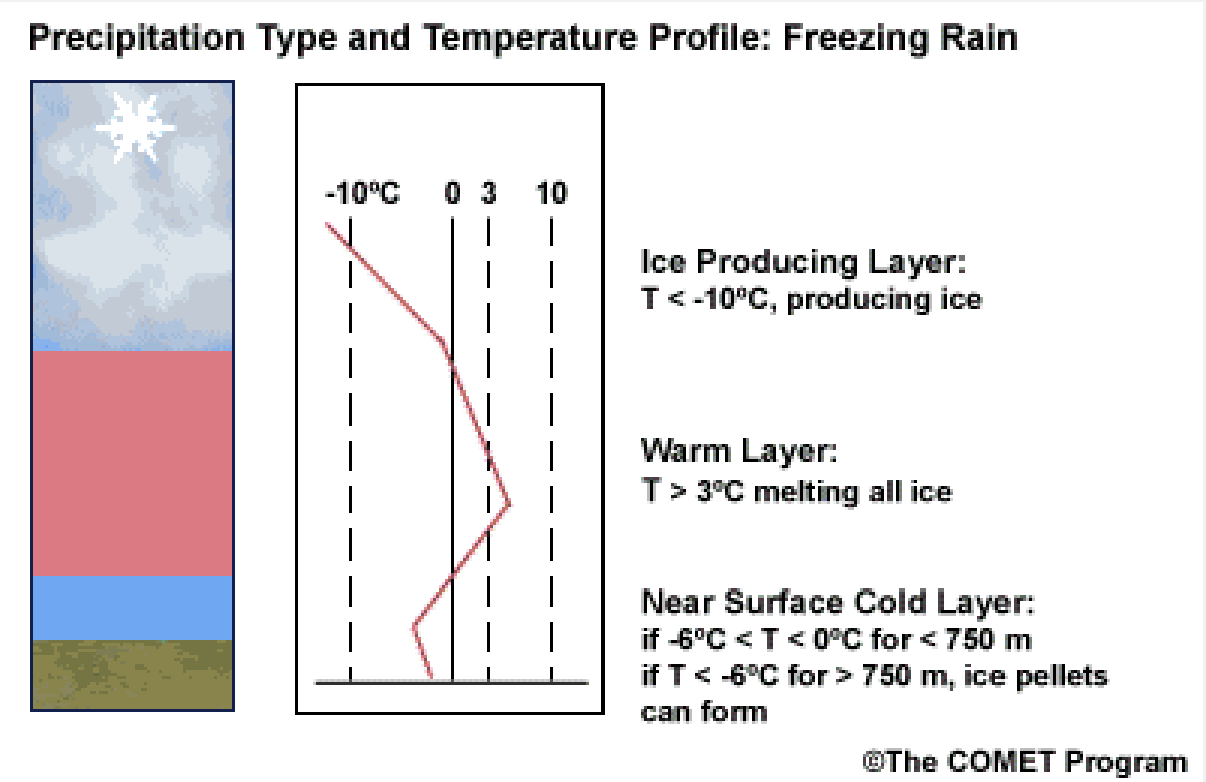




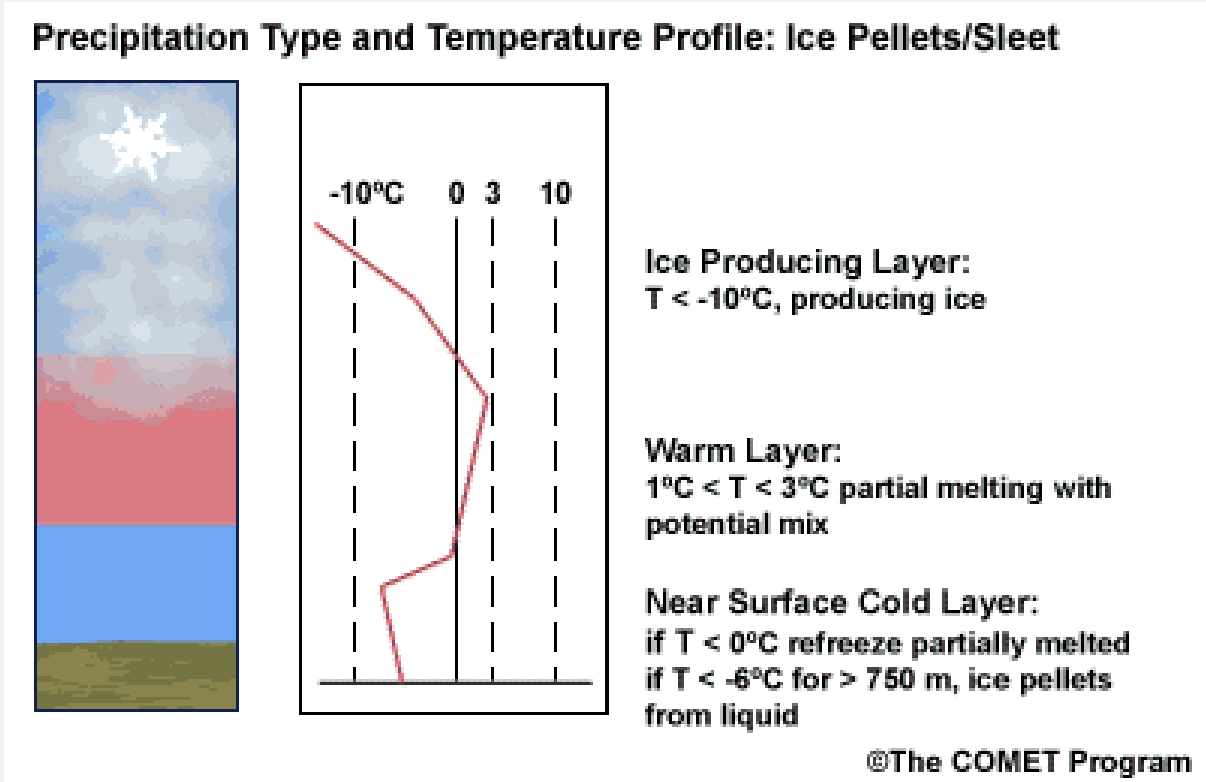
Snow dendrites falling into too much warm air will generally transition to rain

Snow dendrites can survive if it's only just above freezing.

What precipitation type will it be?

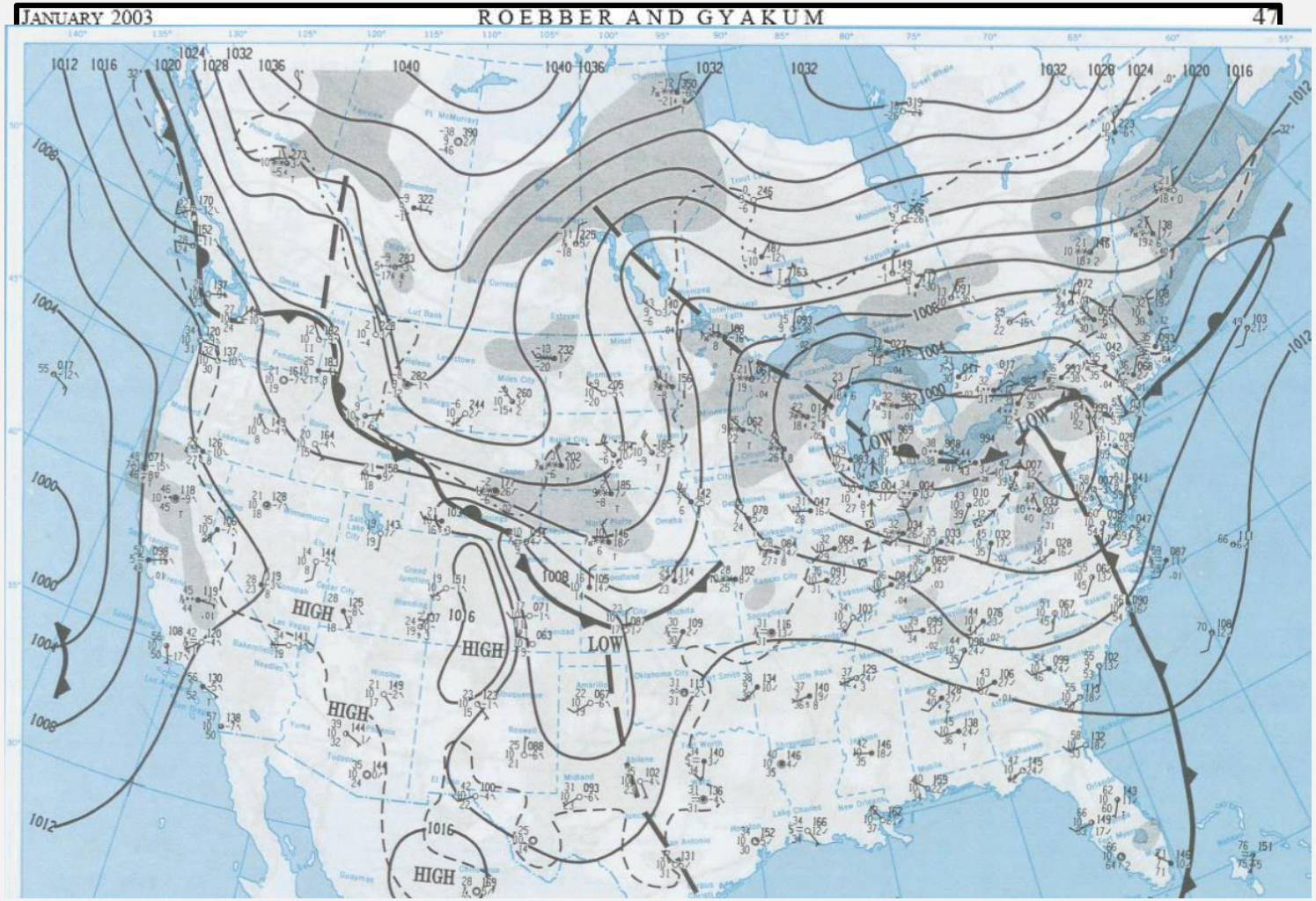


So if a snow dendrite falls into a large and very warm layer. It becomes rain mid-air. If there is not enough cool air near the surface, then water droplet freezes on contact with the surface.



But if there is enough cold air between the then water droplet and the surface, then it refreezes before reaching the surface and falls as sleet.

Role of Terrain in Freezing Rain



- Terrain often causes surface cold fronts to have difficulty pushing past the Adirondacks and Greens.
- Cool, dense north winds remain locked in place.
- Further aloft, winds aren't impeded as much by friction, terrain and temperatures warm above freezing faster than at the surface.
- This can make freezing rain occur in the lower valleys, of which the St. Lawrence Valley is most susceptible.

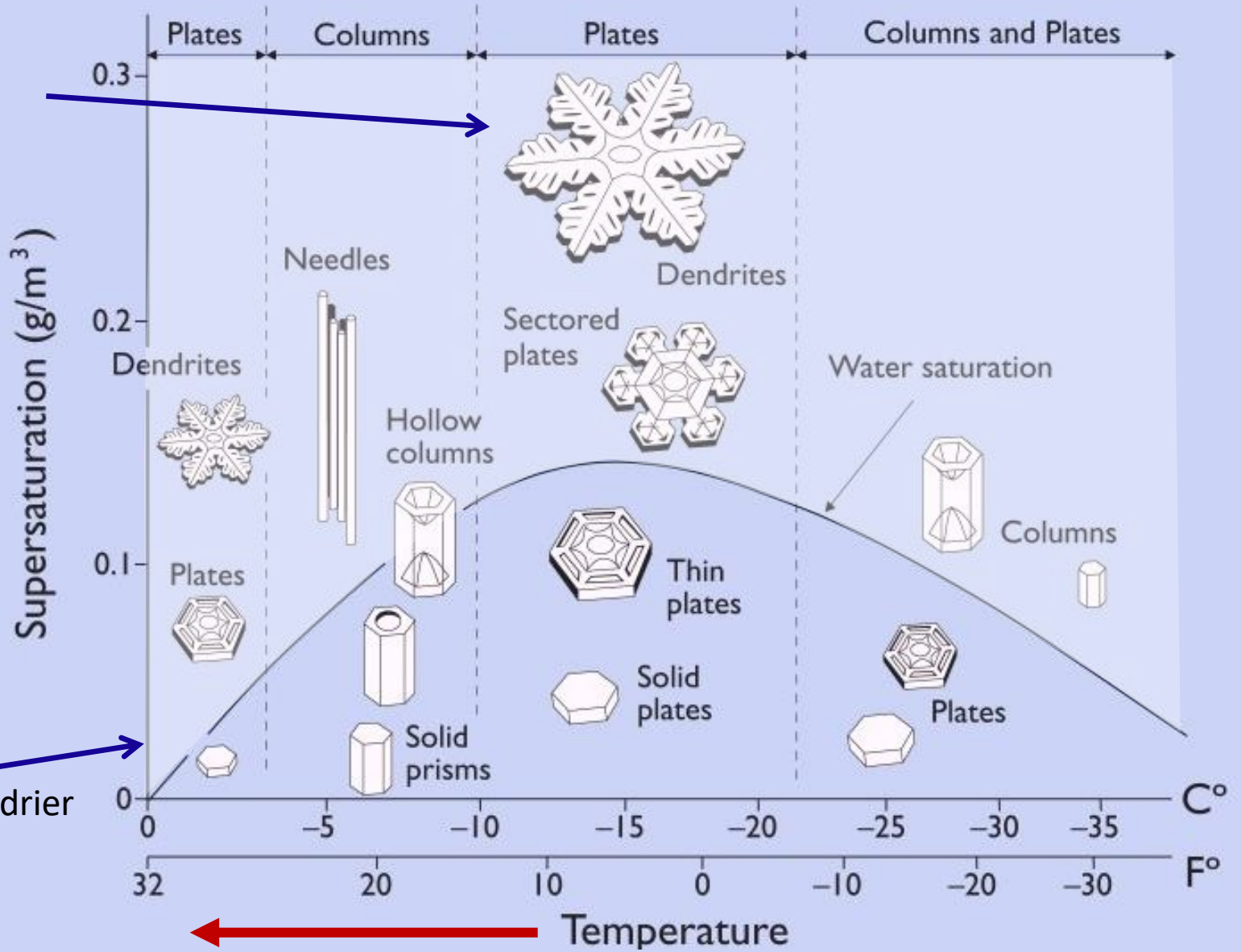
Snowflakes are collections of crystals held together as they melt warmer air.

Combination of temperature and humidity of the air determine snow crystals different shapes.

They are also affected by such things as collisions, partial melting and riming.

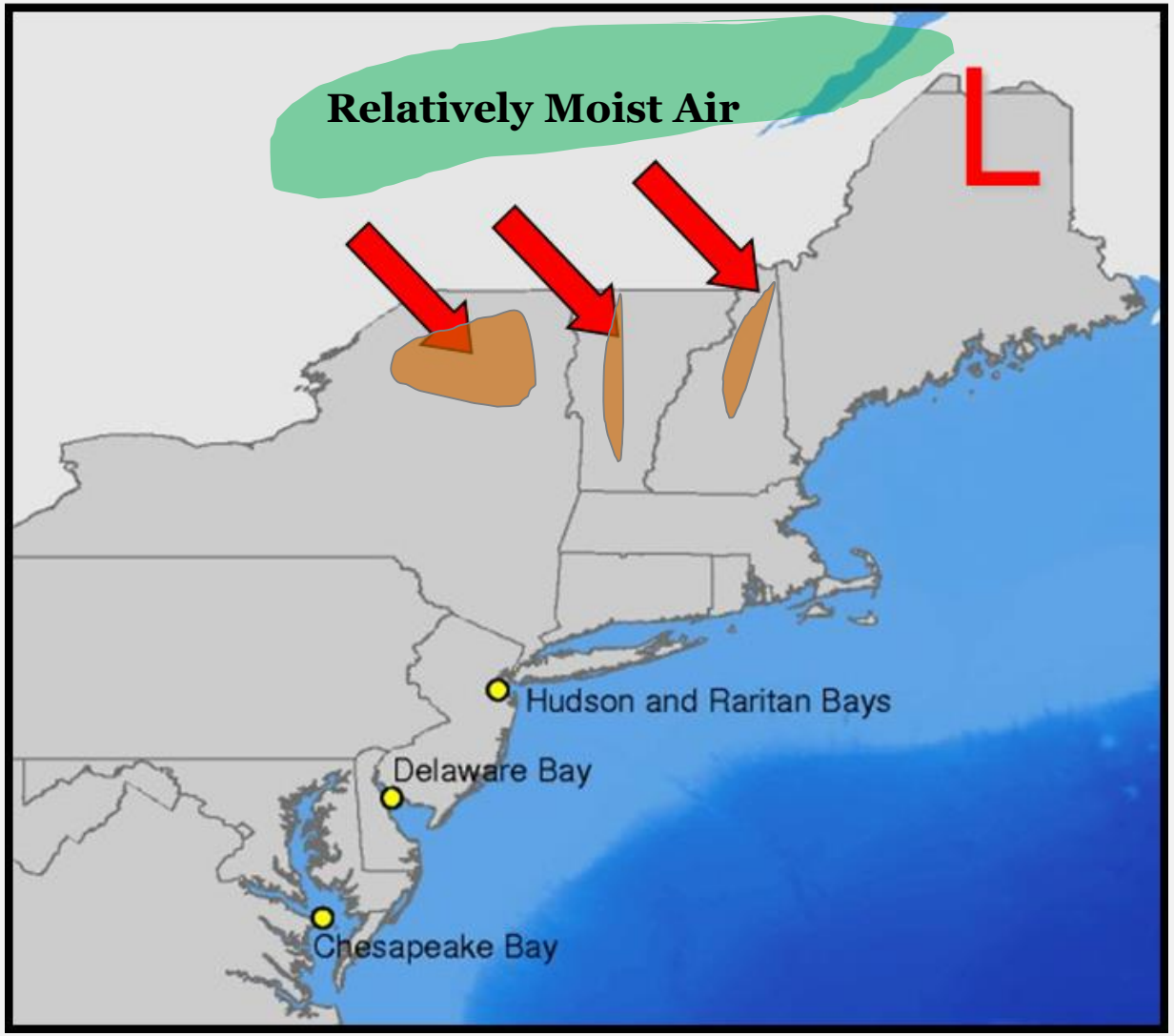
Denser, more moisture

Less dense, drier



Once low pressure is east

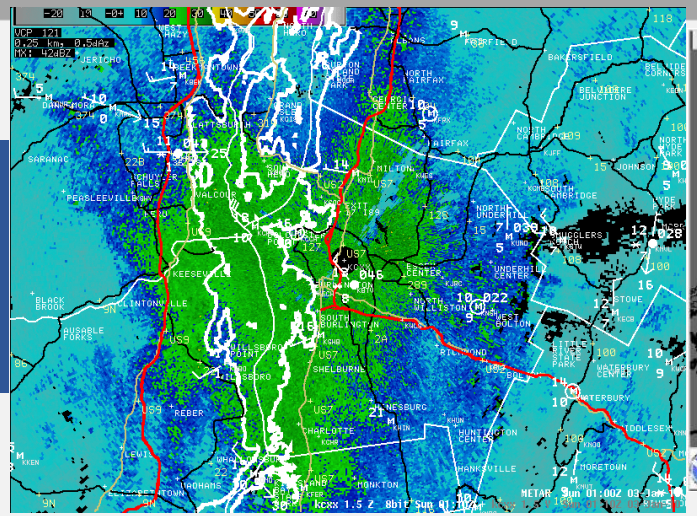
- Localized heavy snow across the western slopes of the Adirondack and Green Mountains
- Snowfall ranges from a trace across valleys to several feet in the mountains

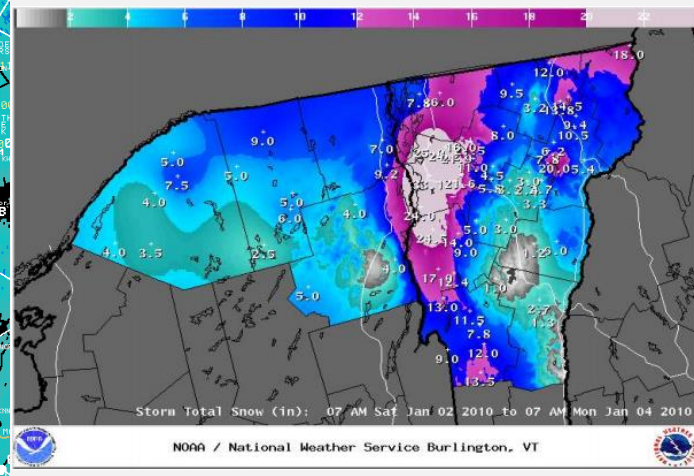


Once low pressure is east

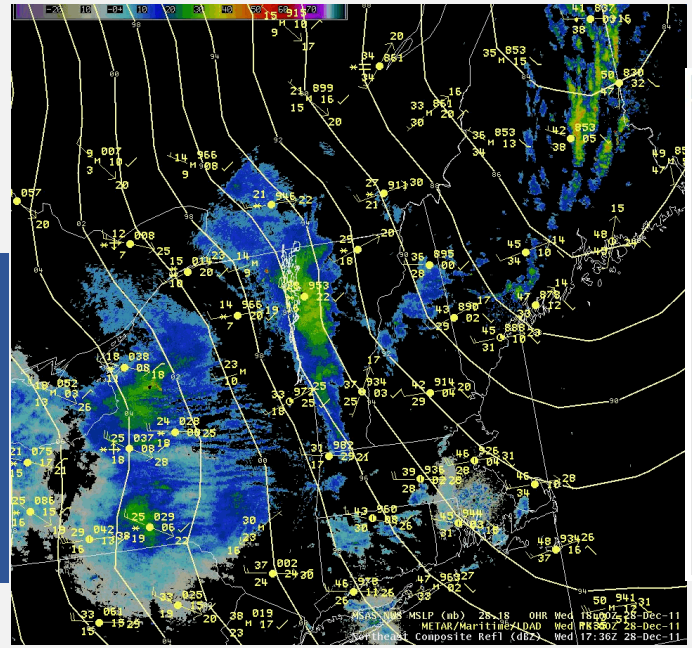
- These upslope events depend on the winds, atmospheric stability, and relative moisture.
- More stable – Snow trapped in lower elevations at foothills
- Less stable – Snow favored over the peaks

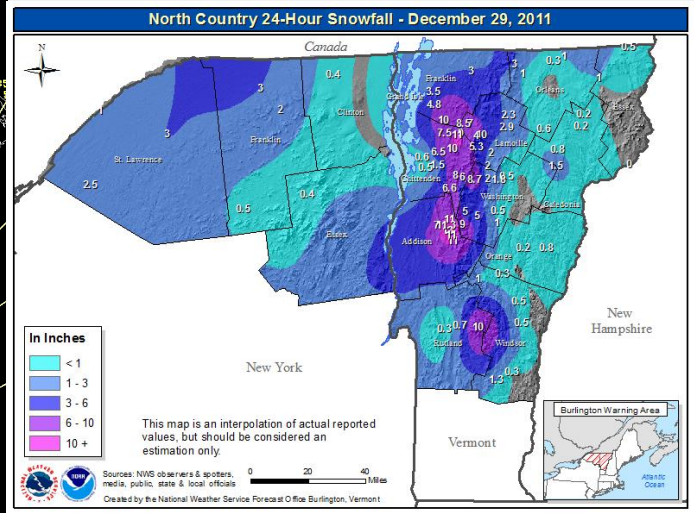
Blocked Flow – Jan 3, 2010





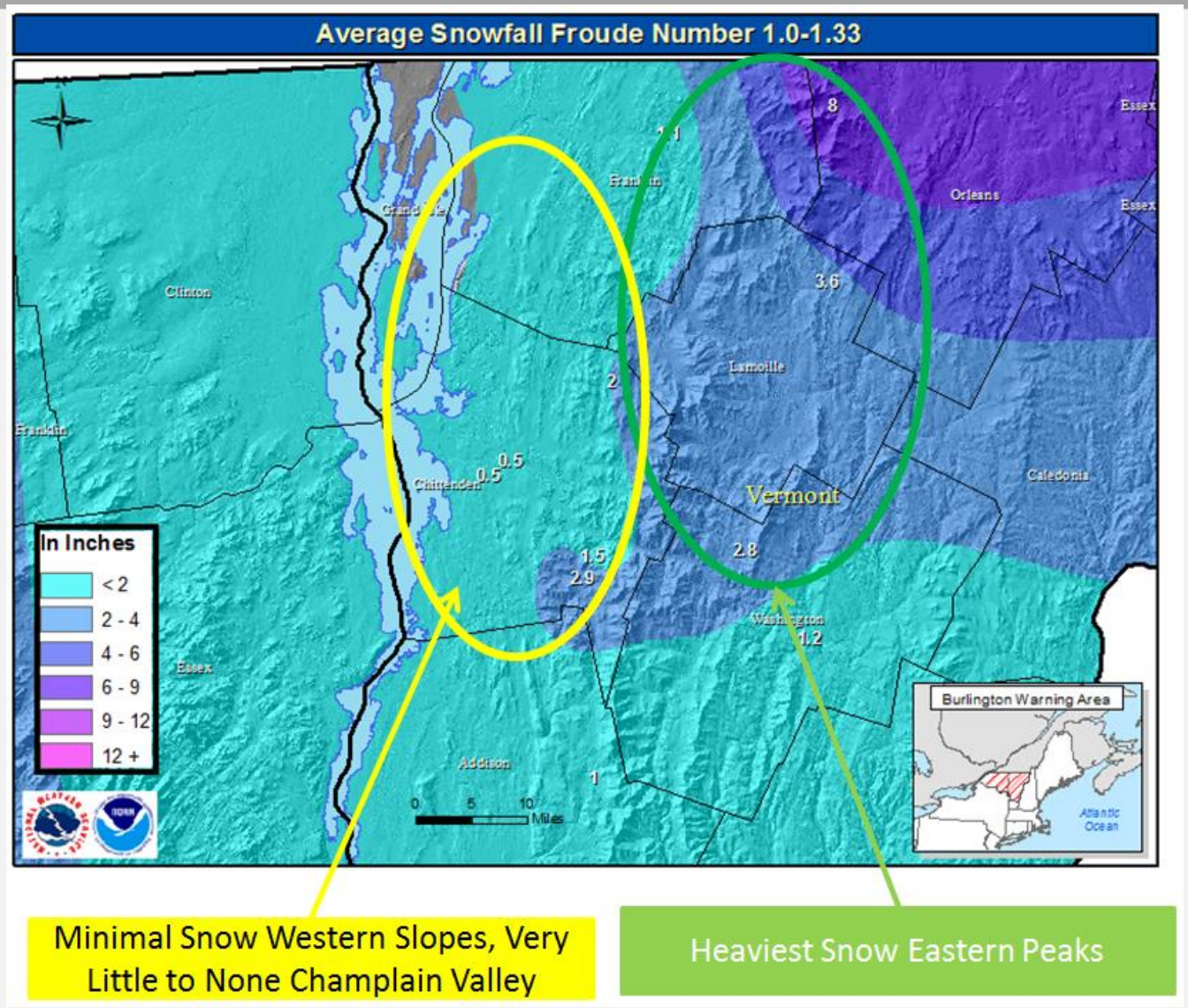
Semi-Blocked Flow– Dec 28, 2011





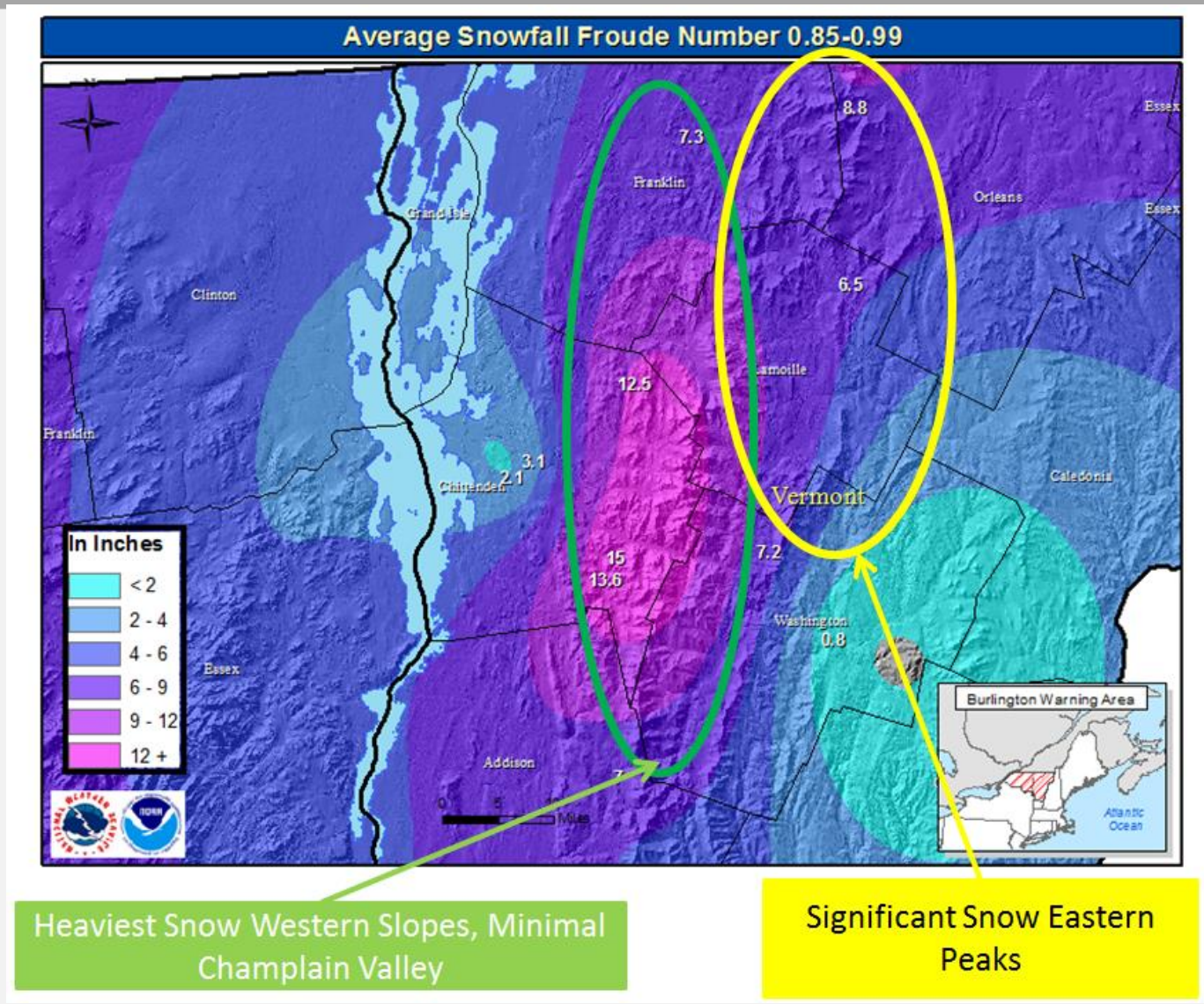
Upslope Snow

UNBLOCKED



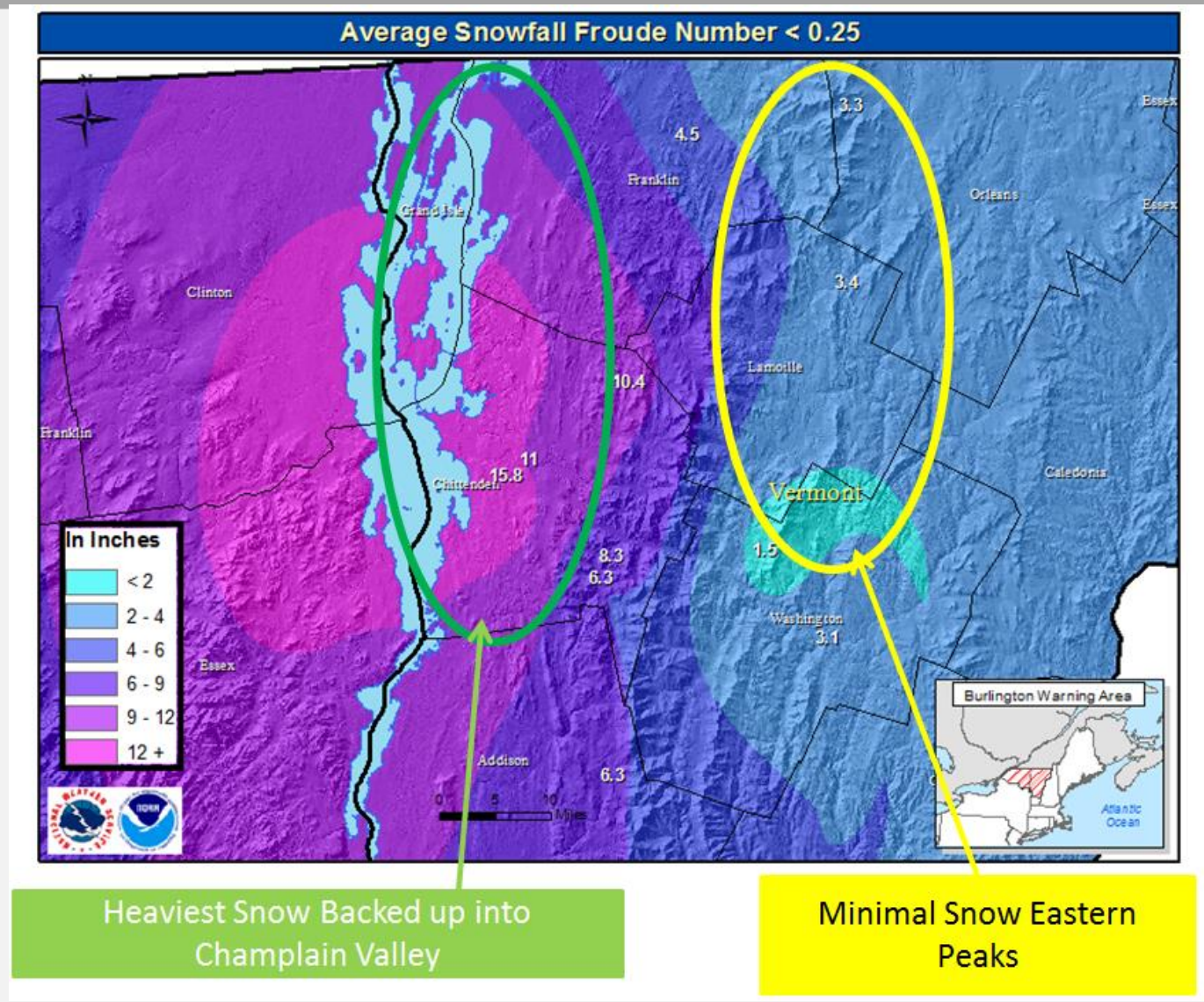
Upslope Snow

SEMI-BLOCKED

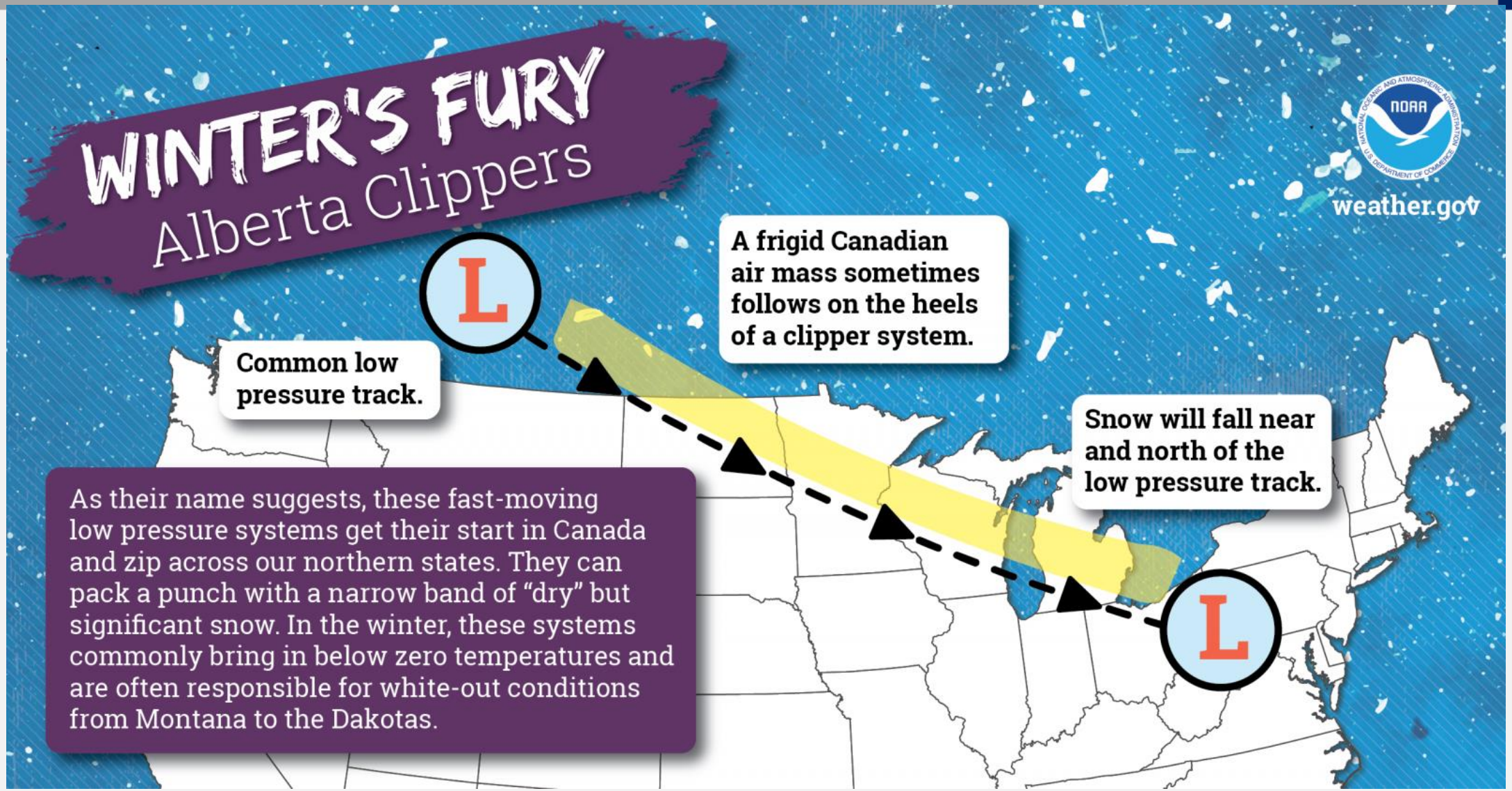


Upslope Snow

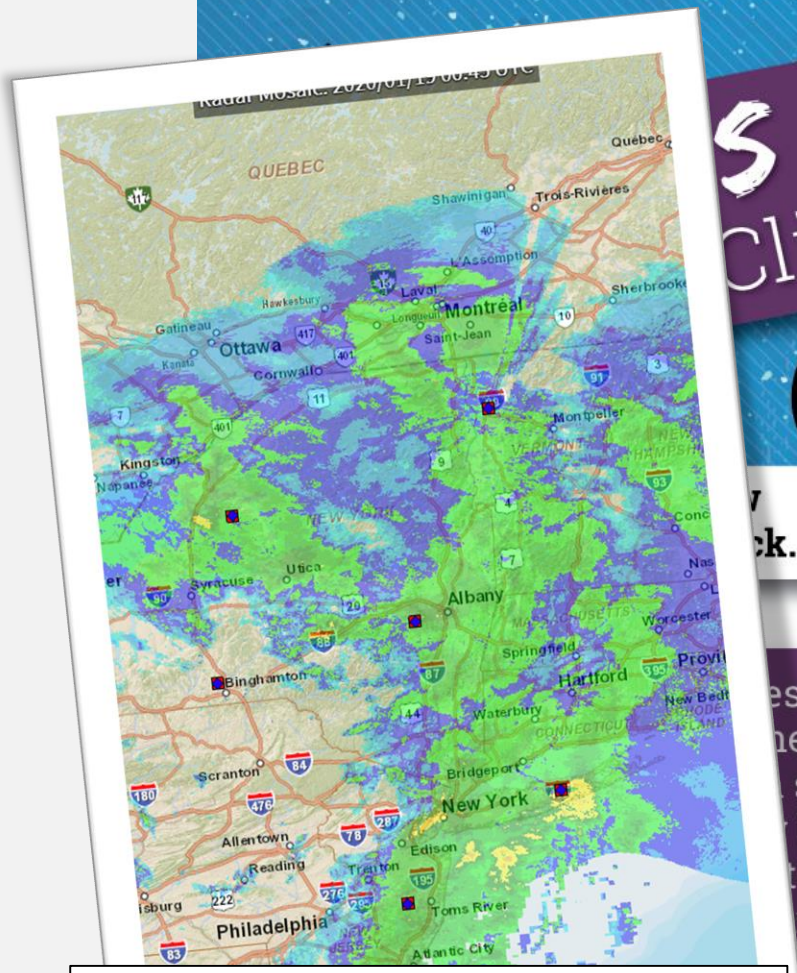
BLOCKED



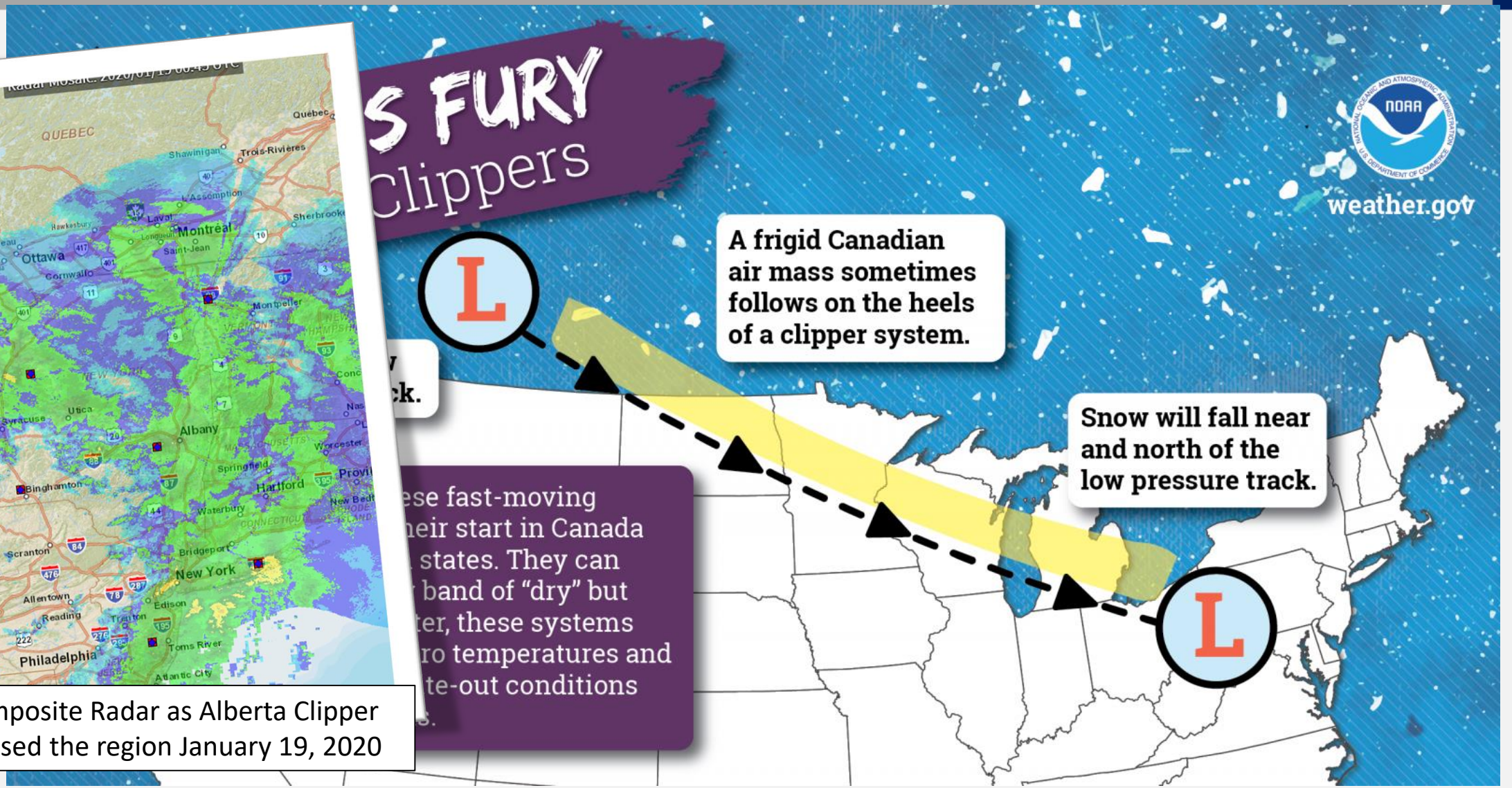
Alberta Clippers



Alberta Clippers



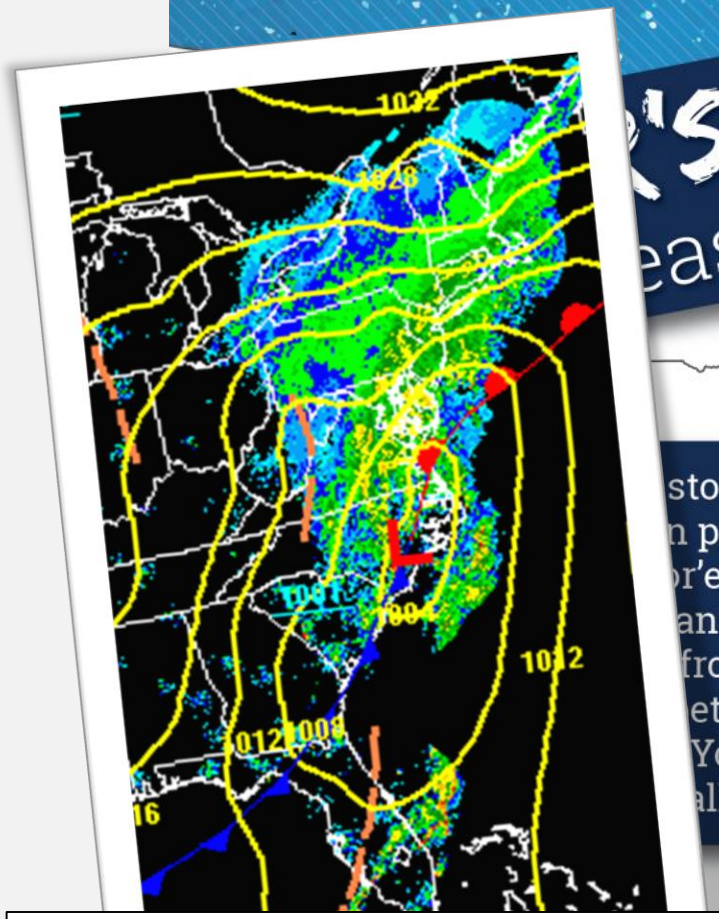
Composite Radar as Alberta Clipper crossed the region January 19, 2020



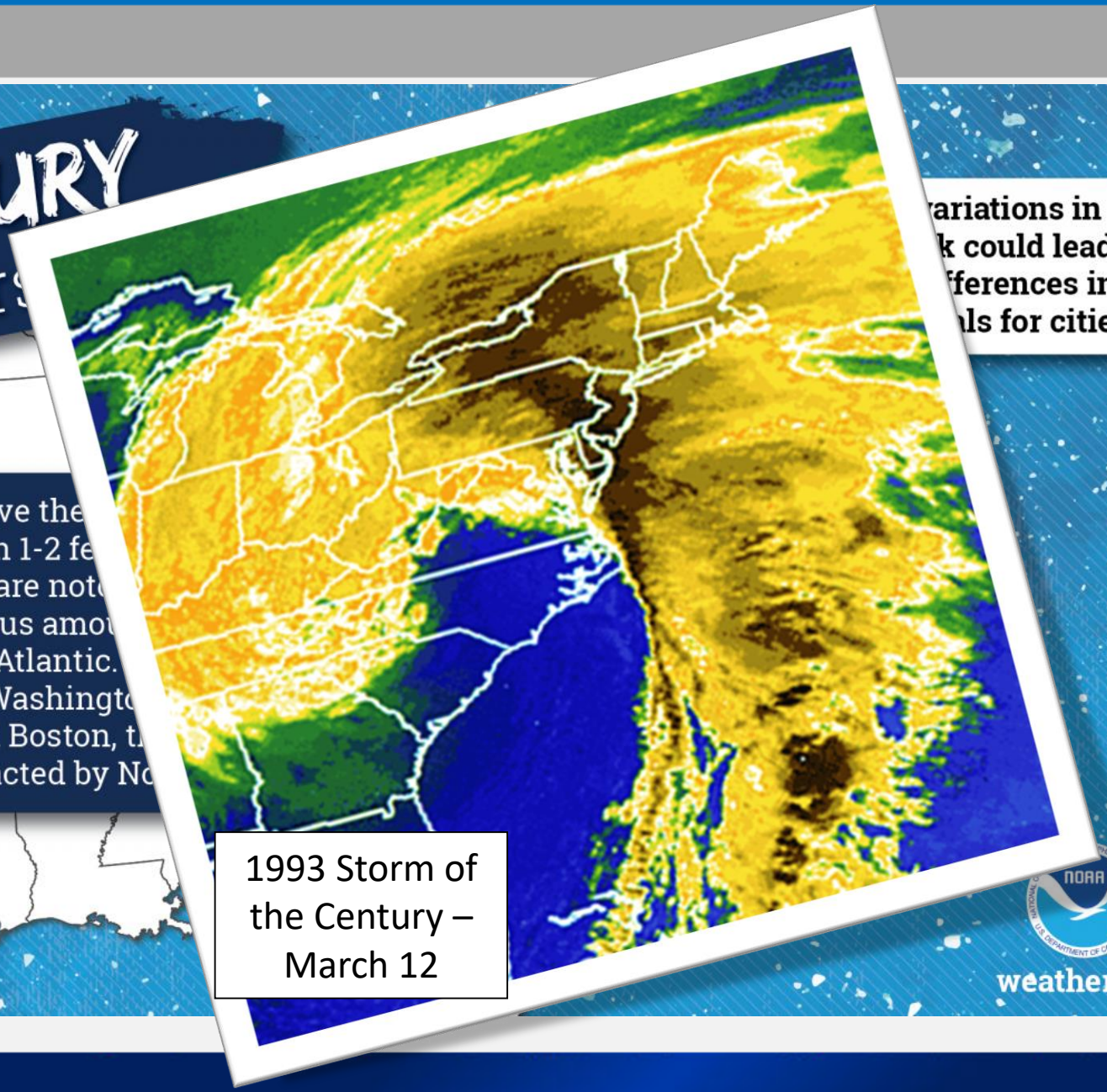
Nor'easters


WINTER'S FURY
Nor'easters
Snow will fall to the west of the low pressure track.
Small variations in the track could lead to big differences in snow totals for cities.
Not many winter storms have the potential to bury 100 million people in 1-2 feet of snow in a single day. Nor'easters are notorious for packing big wind and copious amounts of moisture they get from the Atlantic. The heavily populated region between Washington D.C., Philadelphia, New York and Boston, the "I-95 Corridor," is especially impacted by Nor'easters.
L
L
Common low pressure track.
NOAA
weather.gov

Nor'easters

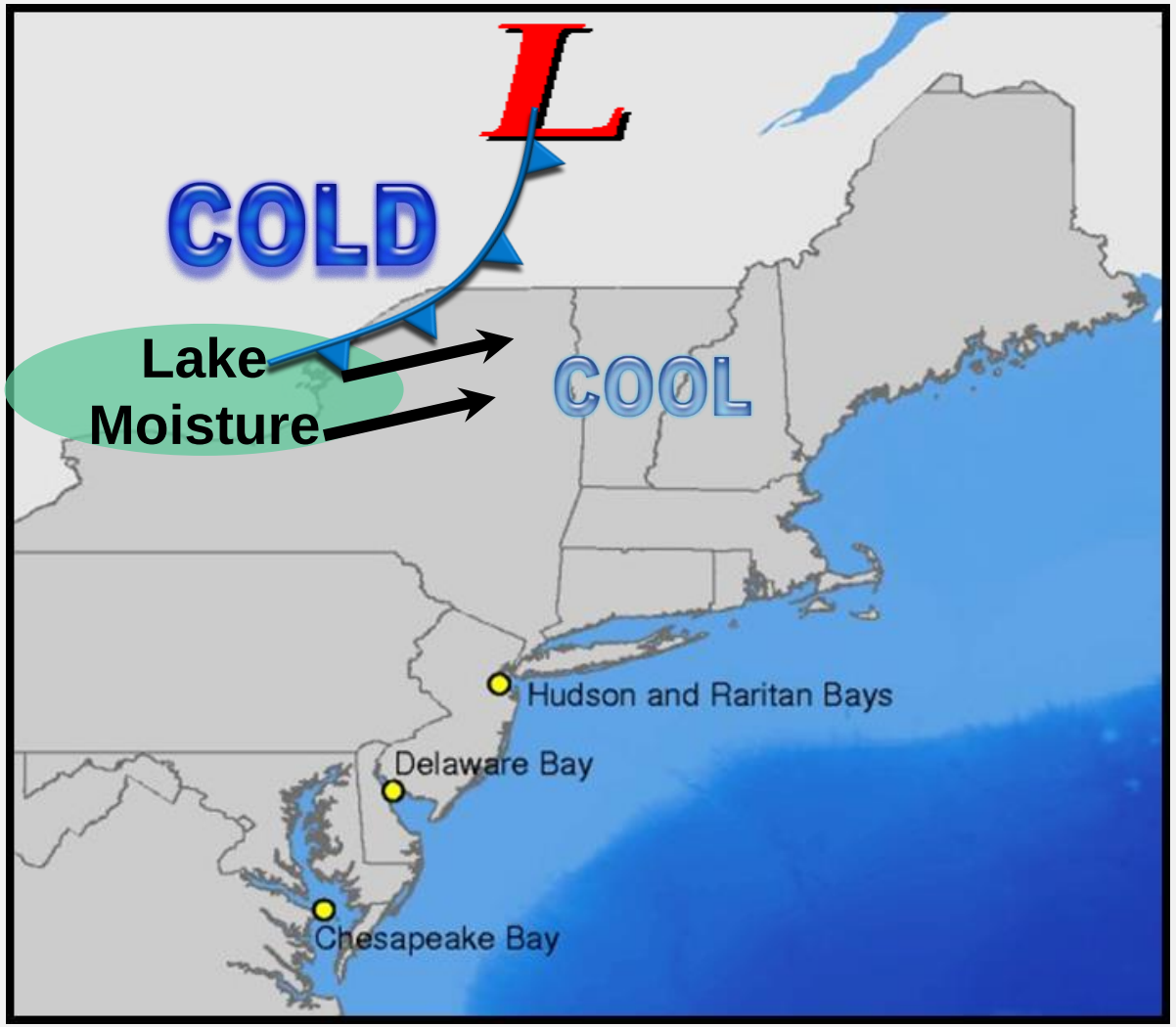


Composite Radar & Surface Chart of a Nor'Easter at 8pm EDT 3/16/2007



Snow Squalls

- Typically occurs with a cold front during winter, but can happen with scattered snow showers
  - Like a blizzard bundled into 30 minutes
  - Strong, gusty winds > 35 mph
  - Heavy snow greatly reduces visibility
  - Rapid onset can catch motorists by surprise



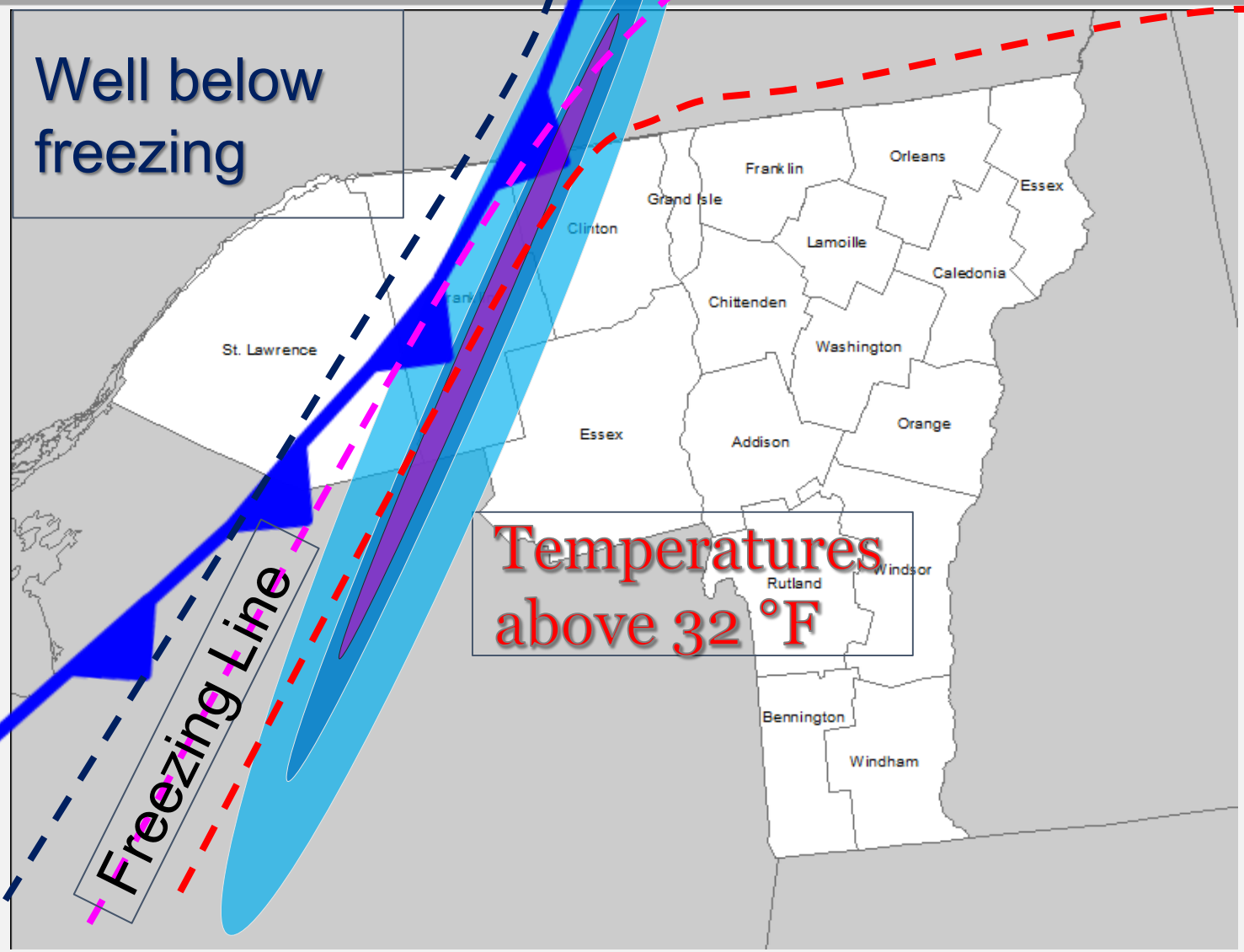

1770 THE GREEN MOUNTAIN BOYS
1946 VERMONT AIR NATIONAL GUARD

Flash Freeze

When a narrow band of snow develops in slightly above freezing conditions, precipitation can melt on roadways.

Once the cold front passes, a rapid transition to temperatures in the teens or 20s can occur.

Any liquid on roads quickly turns to ice.



Blizzard

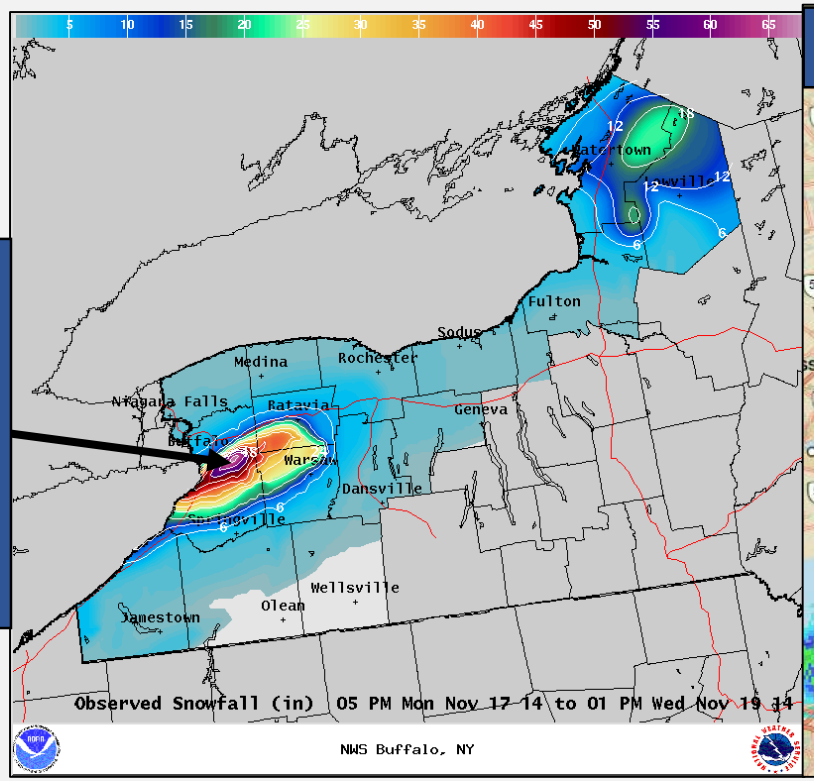
A blizzard means that the following conditions are expected to prevail for a period of 3 hours or longer:

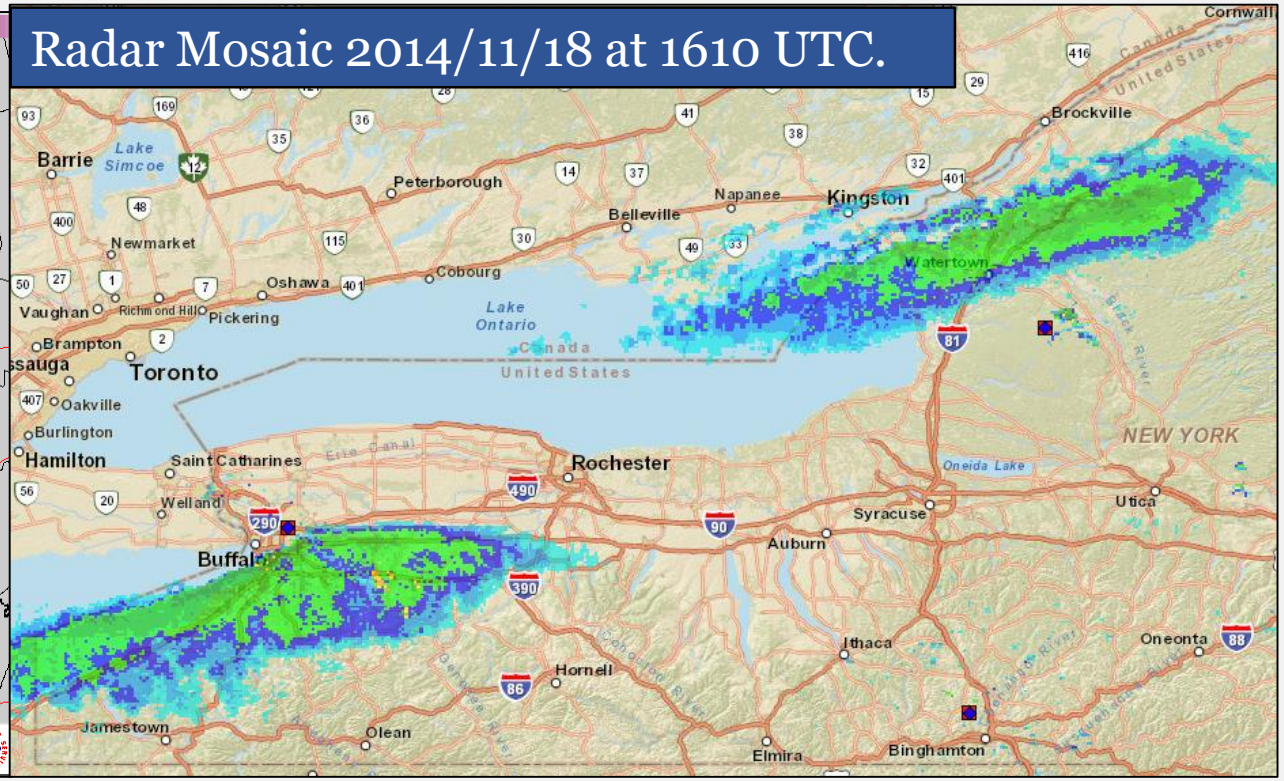
- Sustained wind or frequent gusts to 35 miles an hour or greater; and
- Considerable falling and/or blowing snow, reducing visibility frequently to less than ¼ mile

Early Winter a good time for Lake Effect

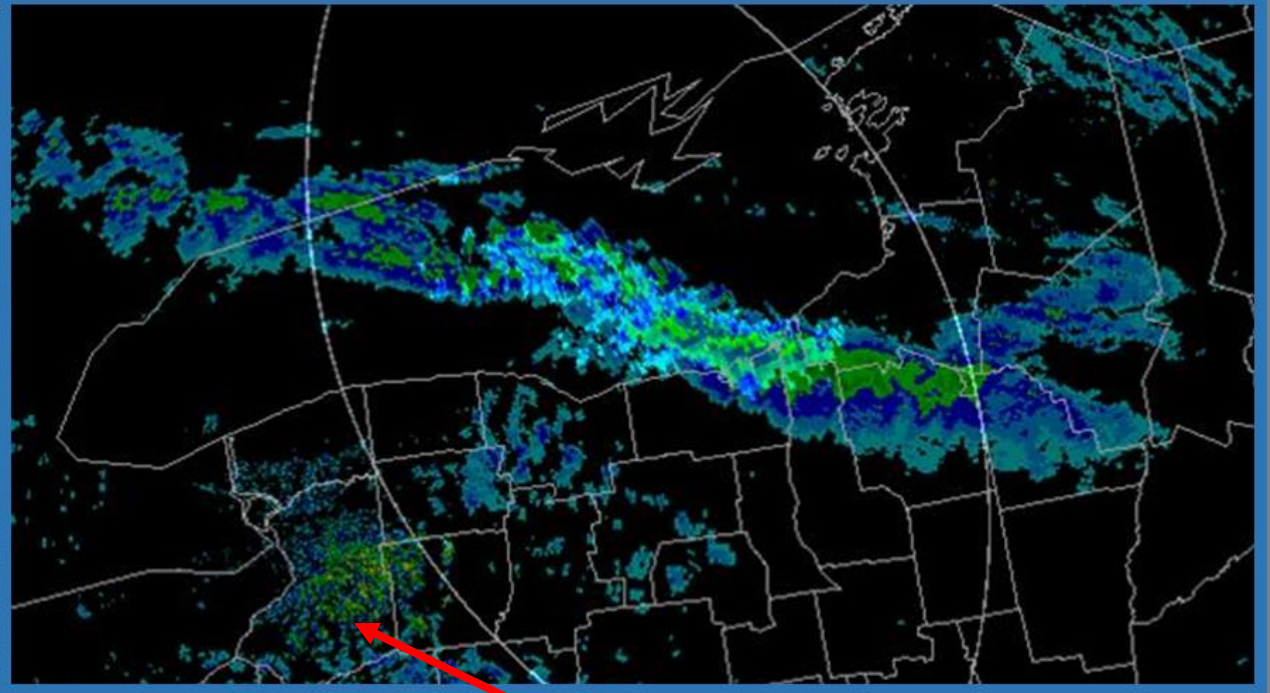
- Water takes a lot more energy to change temperature than air.
- So the Great Lakes stay warm, while we have cool air aloft.
- Creates localized region of high instability off the Great Lakes

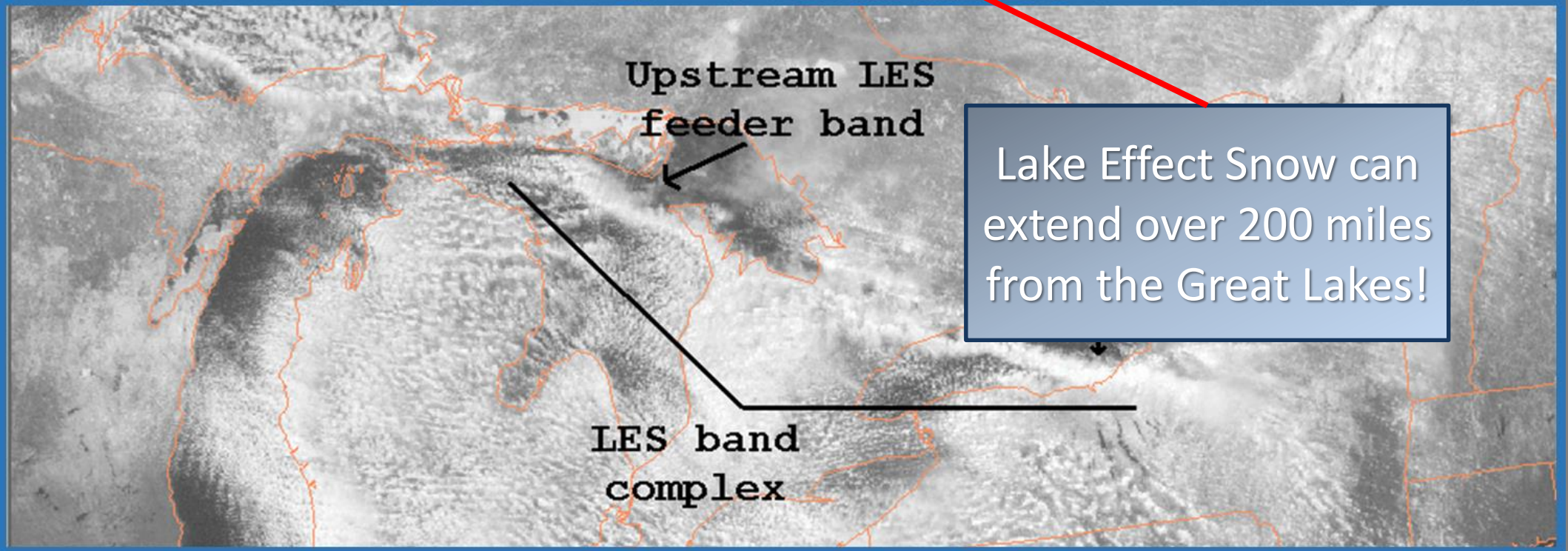
South Cheektowaga – 65" in less than 48 hours!





NATIONAL WEATHER SERVICE BURLINGTON





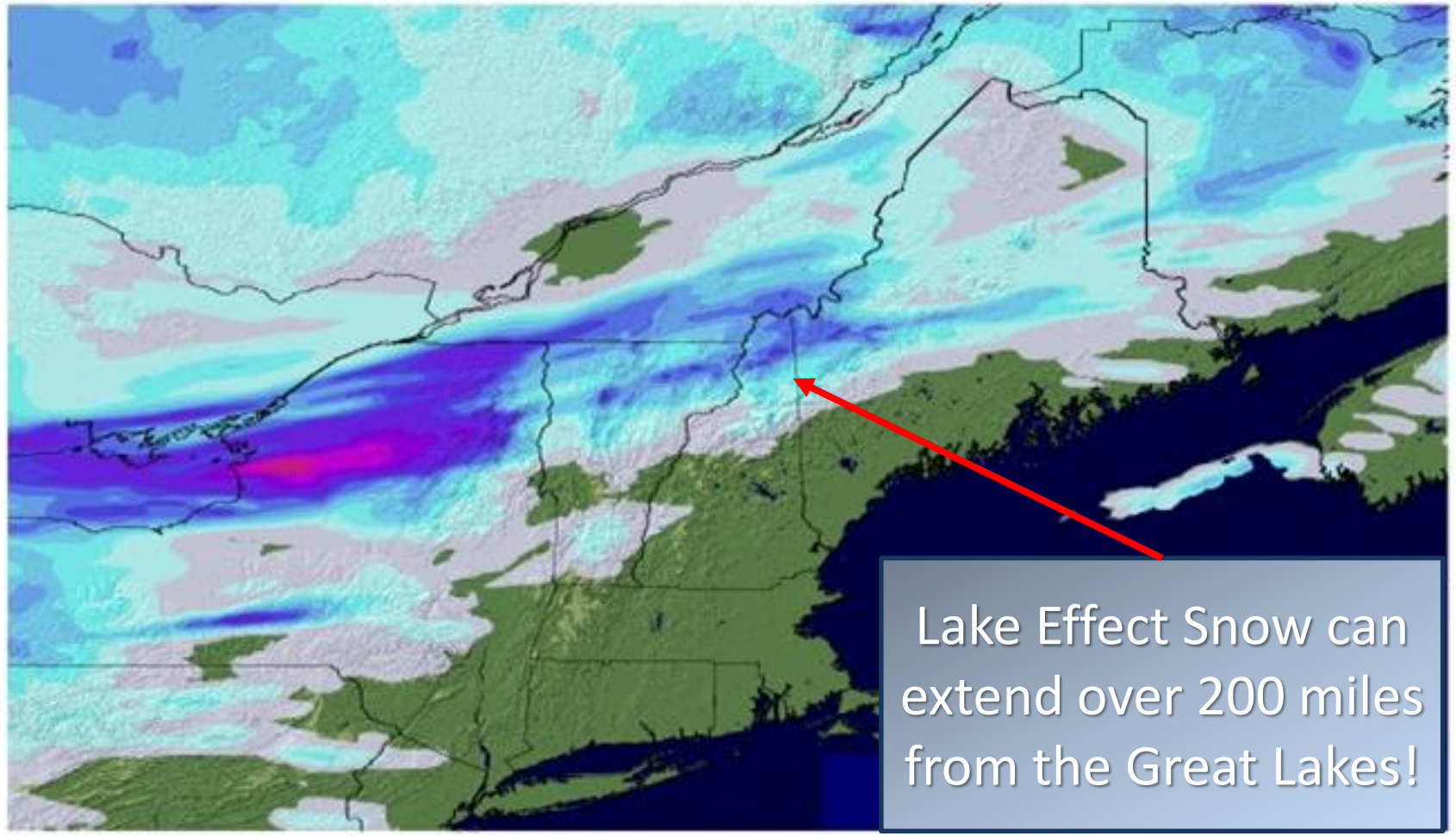
NATIONAL WEATHER SERVICE BURLINGTON

National Snow Analysis 2019-2020

OWP | OFFICE OF WATER PREDICTION

Scaled Snow Precipitation

24-Hour Total Ending 2020-02-29 06 UTC



inches

0 4E⁻³ 0.02 0.04 0.08 0.12 0.16 0.2 0.39 0.59 0.79 0.98 1.4 2 3

2E⁻³ 0.1 0.5 1 2 3 4 5 10 15 20 25 35 50 75

mm

1000s of ft

0 1.6 3.3 4.9 6.6 8.2 9.8 11 13 15

0 0.5 1 1.5 2 2.5 3 3.5 4 4.5

Elevation (km)

Review Questions

Which letter describes the difference between sleet and freezing rain

- **A.) There is more ice accumulation from sleet than there is from freezing rain.**
- **B.) Sleet is rain that has refrozen before reaching the ground, while freezing rain becomes frozen upon contact with the ground.**
- **C.) The depth of cold air near the ground is less for sleet than for freezing rain.**

Review Questions

Which letter describes the difference between sleet and freezing rain

- **A.) There is more ice accumulation from sleet than there is from freezing rain.**
- **B.) Sleet is rain that has refrozen before reaching the ground, while freezing rain becomes frozen upon contact with the ground.**
- **C.) The depth of cold air near the ground is less for sleet than for freezing rain.**

Questions?

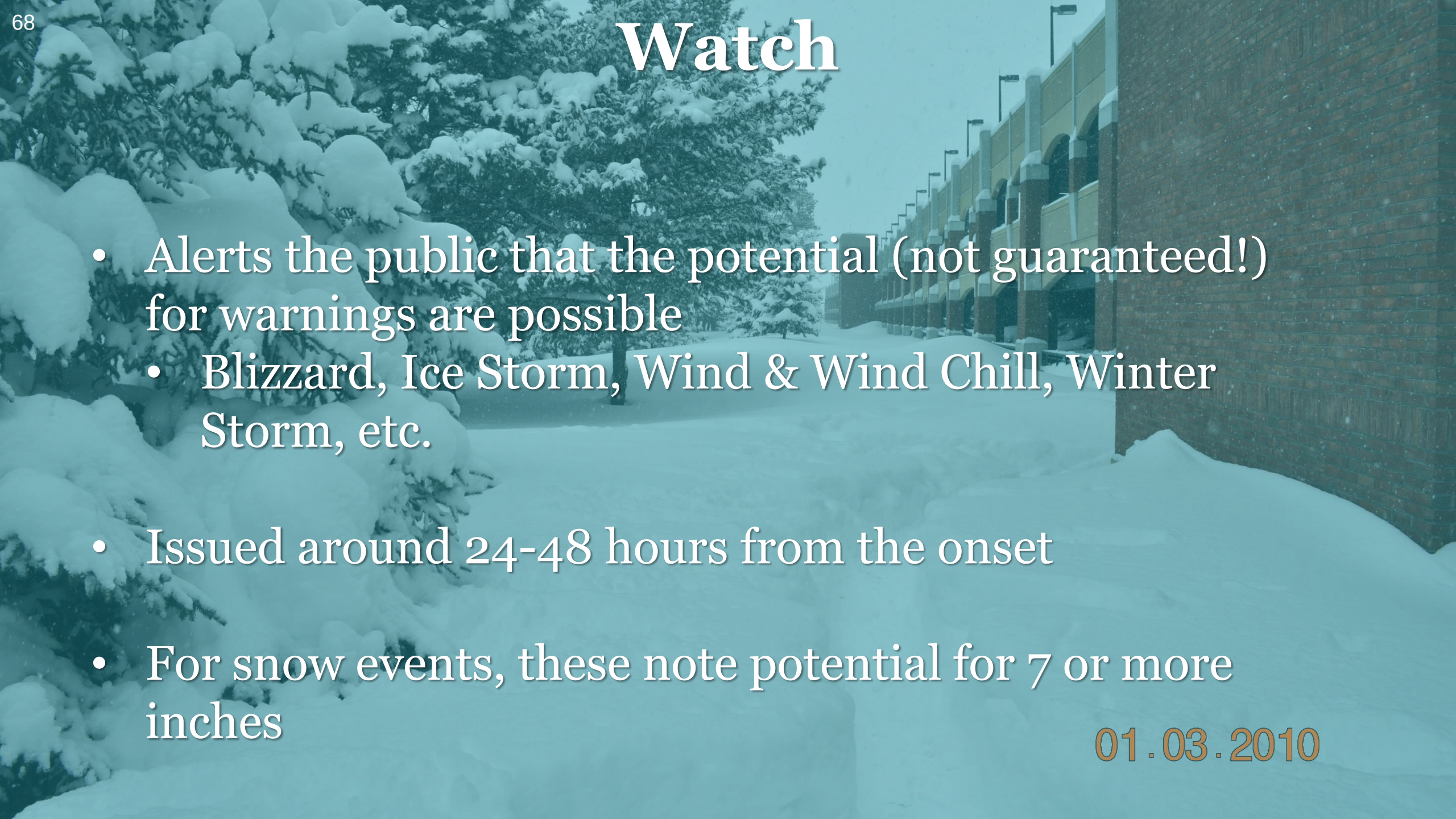
Hazardous Weather Outlook

- Issued prior to any winter related products
- During winter, this will highlight potential for snow, winds, extreme cold, or flooding.
- 2 to 5 days in advance

01.03.2010

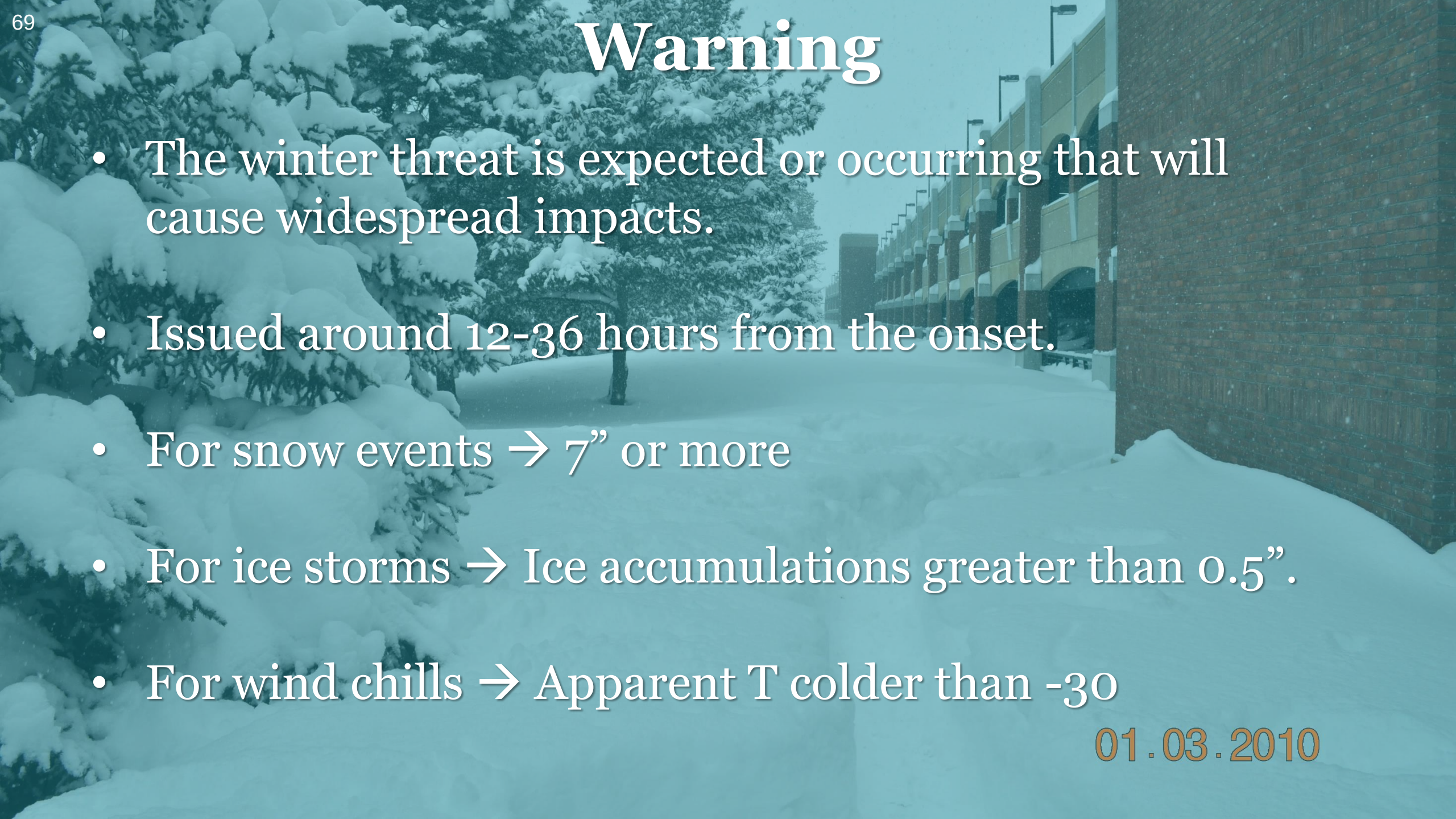
Watch

- Alerts the public that the potential (not guaranteed!) for warnings are possible
  - Blizzard, Ice Storm, Wind & Wind Chill, Winter Storm, etc.
- Issued around 24-48 hours from the onset
- For snow events, these note potential for 7 or more inches



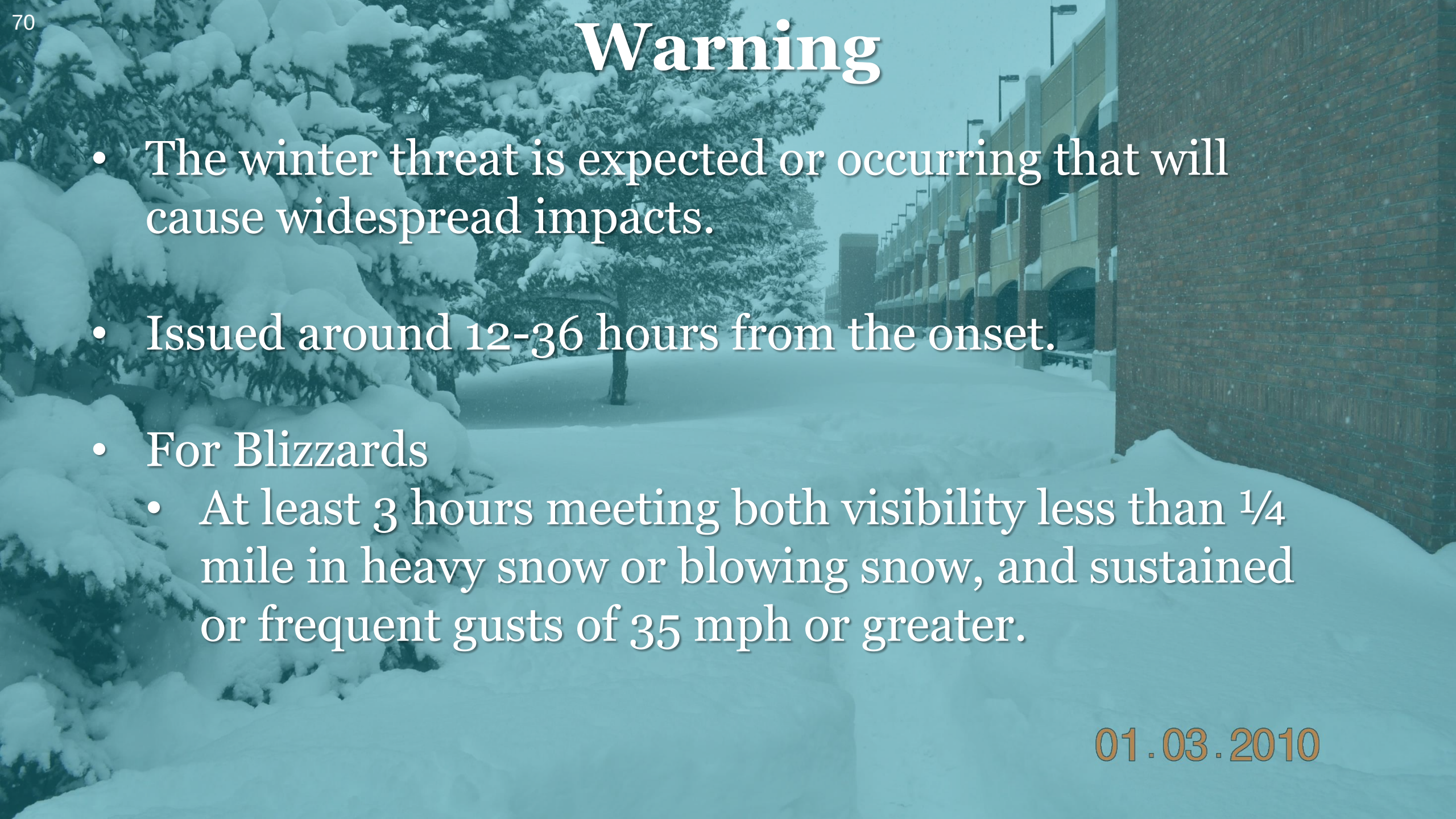
Warning

- The winter threat is expected or occurring that will cause widespread impacts.
- Issued around 12-36 hours from the onset.
- For snow events → 7” or more
- For ice storms → Ice accumulations greater than 0.5”.
- For wind chills → Apparent T colder than -30



Warning

- The winter threat is expected or occurring that will cause widespread impacts.
- Issued around 12-36 hours from the onset.
- For Blizzards
  - At least 3 hours meeting both visibility less than ¼ mile in heavy snow or blowing snow, and sustained or frequent gusts of 35 mph or greater.



Advisory

- The winter threat is expected or occurring that will likely cause inconveniences, like difficult travel.
- Issued around 12-36 hours from the onset
- For snow events
  - 4 or more inches of snow in 12 hours
  - 6 or more inches of snow in 24 hours
- For ice storms → A light glaze up to 0.50”.
- For wind chills → Apparent T of -20 to -30

01.03.2010

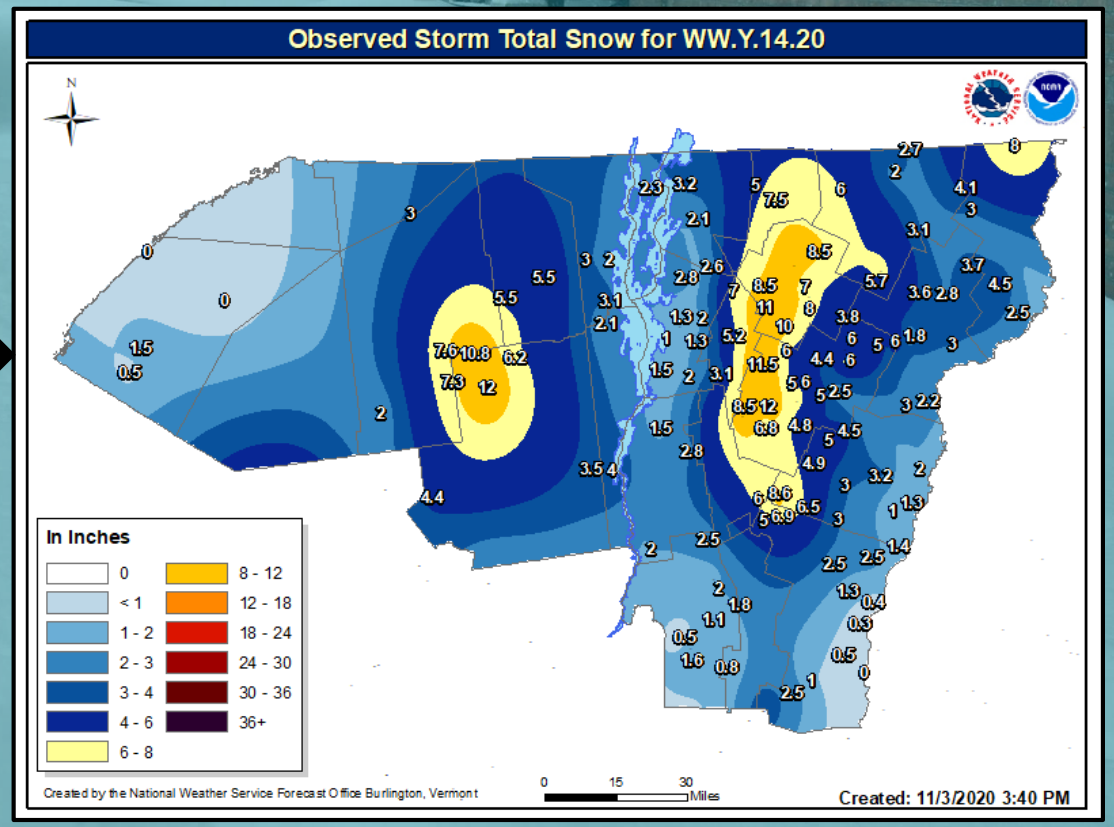
Collecting Reports

- We collect and digest snowfall and ice reports from weather stations, spotters, COOP volunteers, and the general public to issue Public Information Statements. Through Geographic Information Systems (GIS), we can develop maps like these!

```
Public Information Statement
Spotter Reports
National Weather Service Burlington VT
321 PM EST Tue Nov 03 2020

The following are unofficial observations taken during the past 48
hours for the storm that has been affecting our region. Appreciation
is extended to highway departments, cooperative observers, Skywarn
spotters, and media partners for these reports. This summary is also
available on our home page at www.weather.gov/burlington.

********************STORM TOTAL SNOWFALL********************

LOCATION          STORM TOTAL     TIME/DATE   COMMENTS
                     SNOWFALL          OF
                     /INCHES/   MEASUREMENT

NEW YORK

...Clinton County...
   Riverview             5.5   531 AM 11/03  Public
   Saranac               5.5   700 AM 11/03  CoCoRaHS
   Plattsburgh           3.4  1200 AM 11/03  Public
   4 ESE Peru            3.1   600 AM 11/03  CoCoRaHS
   Morrisonville         3.0  1120 PM 11/02  Public
   1 S Plattsburgh       2.0   718 AM 11/03  Co-Op Observer

...Essex County...
   Lake Placid          12.0   824 AM 11/03  Co-Op Observer
   3 S Vermontville     10.8   700 AM 11/03  CoCoRaHS
   2 WNW Wilmington      6.2   700 AM 11/03  Co-Op Observer
   3 W Newcomb           4.4   700 AM 11/03  Co-Op Observer
   Port Henry            4.0  1115 AM 11/03  Public
   Moriah                3.5   652 AM 11/03  Public
   Keeseville            2.1   700 AM 11/03  CoCoRaHS
```

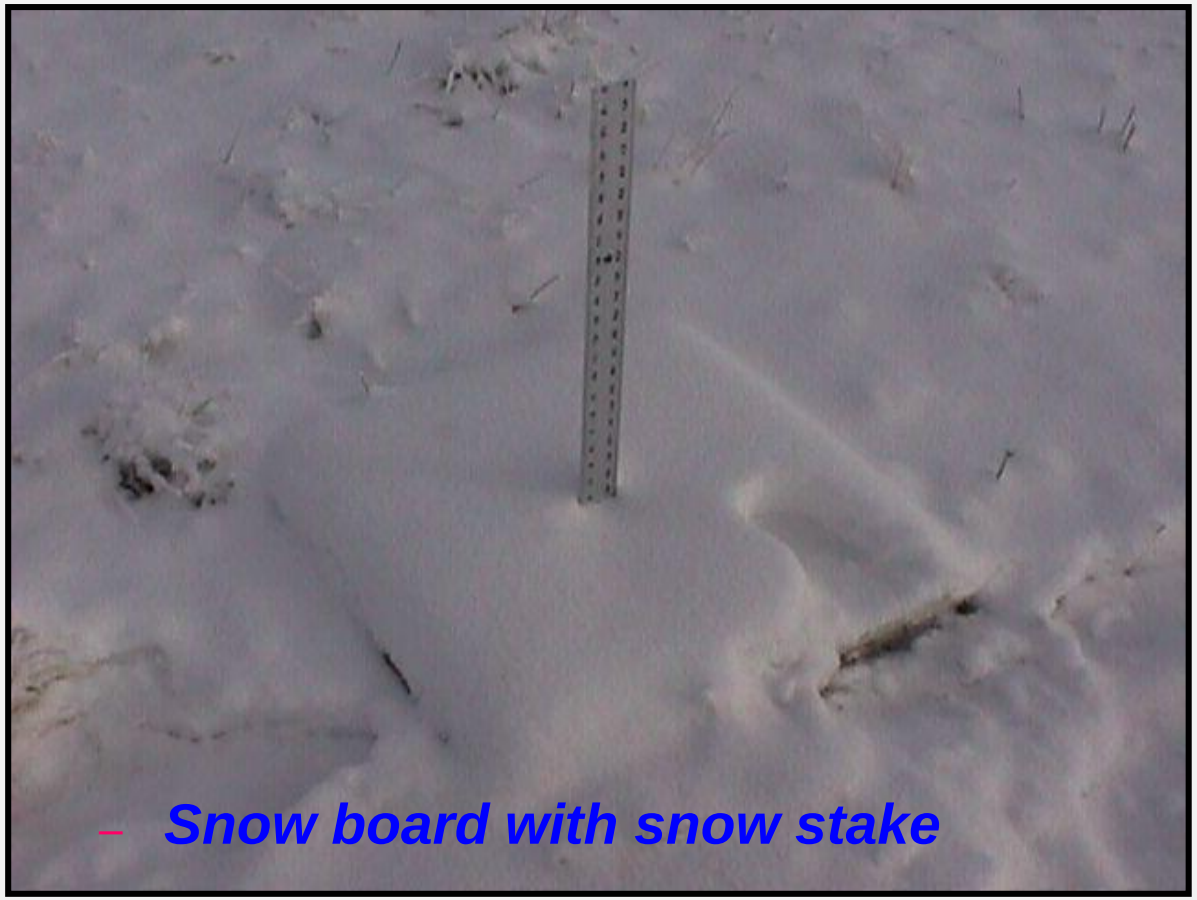
Not complete list

Reports map and help us verify



Snow Measurement Guidelines

- Official method is to measure total depth of snow on the board every six hours
- Then wipe clean and start process over
- Individual hourly rates may be reported, but the total snowfall for any given event is the summation of the six hourly totals.
- Take an average of measurements on the board.



– *Snow board with snow stake*

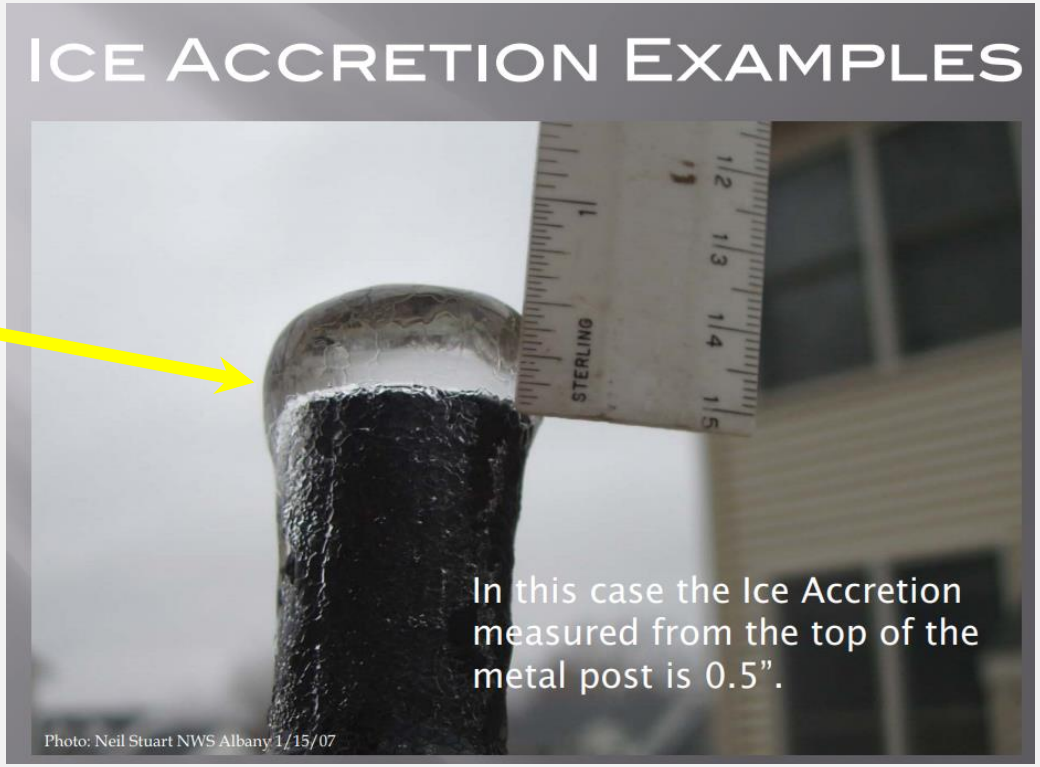
You may want a colorful flag to find your board!

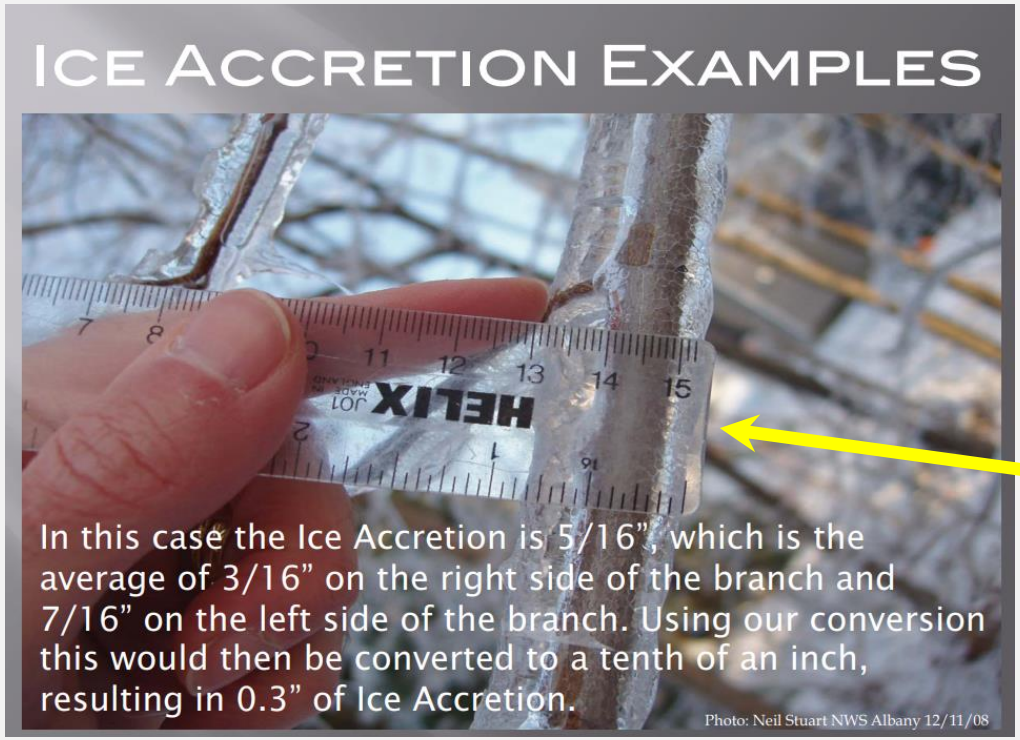
Snow Measurement Guidelines Contd.

- An example of an appropriate snow measuring site
  - Open Ground, Away from Trees/Buildings
- Ideally, use a snow stake to measure depth or a snow board.

Ice Measurement

Either pick a flat surface





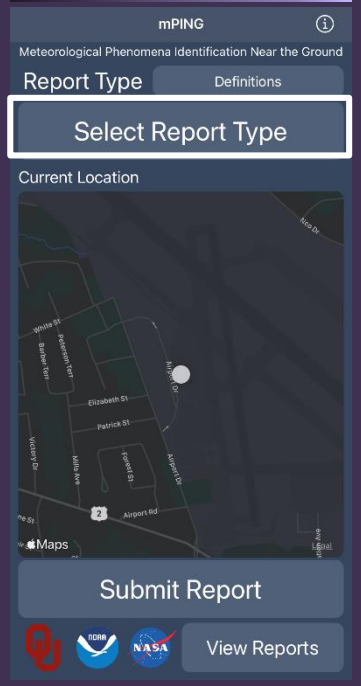
Or use a tree branch

Submit reports with the tap of your finger!

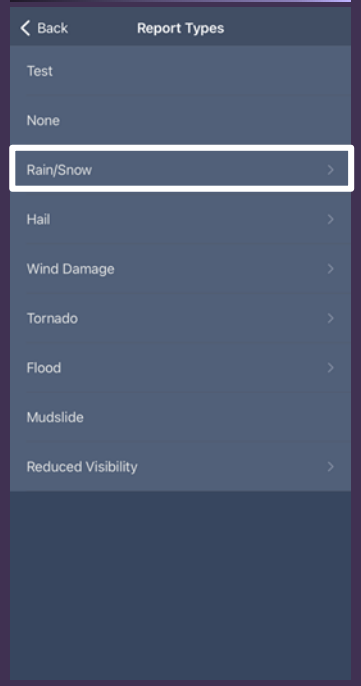
Use the mPING App to record the weather at your location

- Download the free app
- Tell us when precipitation begins, changes, or ends where you're at!
- Support research as a citizen scientist – report as often as you would like
- Below is how to report freezing rain

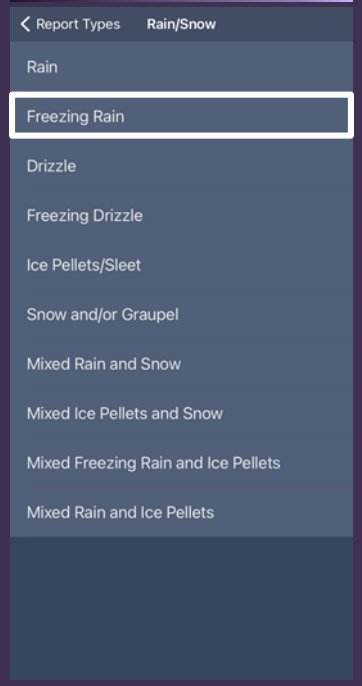
Step 1: Select "Report Type"



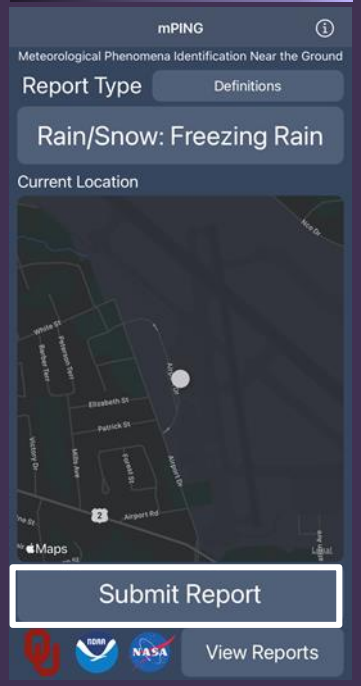
Step 2: Select "Rain and/or Snow"



Step 3: Choose what's falling



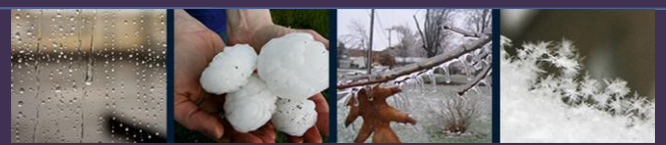
Step 4: Select "Submit Report"



https://mping.ou.edu

Download on the App Store

GET IT ON Google play



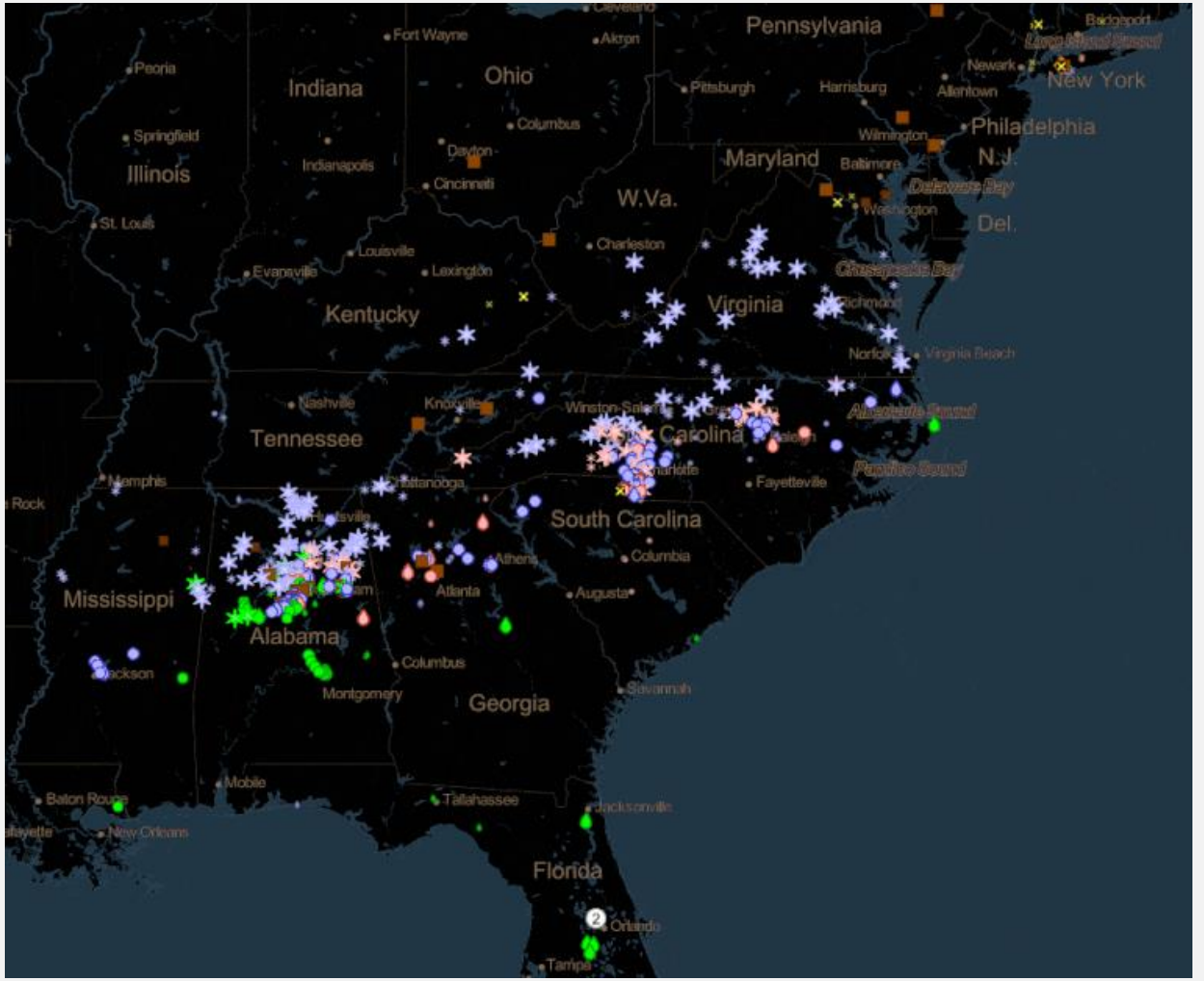
New to mPING

Reporting snow squalls has been added to mPING

- Click “Select Report Type”
- Search under “Reduced Visibility”
- Select Snow Squall

This will help verification for this weather phenomena that we began issuing warnings for in 2018!

Download in Apple’s App Store or Google Play!



Reporting Methods

- By Phone (802-862-2475) - unlisted
- By Social Media (FB/Twitter)
- By Amateur Radio (WX1BTV - 144.510 MHz)
- By our storm report page (https://www.weather.gov/btv/stormreport)
- By mPING (https://mping.ou.edu/static/mping/access.html) - access via iPhone or Google Store - and select your weather observation.
- Share with us your photos!

Review Questions

Which time lines a possible flow of headlines that can come out of the National Weather Service for specific winter hazards

- **A.) Advisory → Watch → Warning**
- **B.) Hazardous Weather Outlook → Warning → Watch**
- **C.) Warning → Hazardous Weather Outlook → Watch**
- **D.) Hazardous Weather Outlook → Watch → Advisory**
- **E.) Hazardous Weather Outlook → Warning**

Review Questions

Which time lines a possible flow of headlines that can come out of the National Weather Service for specific winter hazards

- **A.) Advisory → Watch → Warning**
- **B.) Hazardous Weather Outlook → Warning → Watch**
- **C.) Warning → Hazardous Weather Outlook → Watch**
- **D.) Hazardous Weather Outlook → Watch → Advisory**
- **E.) Hazardous Weather Outlook → Warning**

Questions?

Summary

- A reliable Skywarn Spotter provides ground truth and potentially life-saving information (downed trees or lines/funnel clouds/heavy rain/wind damage)
- Winter hazards include
  - Ice Jam Flooding
  - Winter Storms with Heavy, Snow or Ice
  - Strong winds that can down trees and cause power outages
- Your safety should come first. Never put yourself in harms way to provide us info. Winterize your vehicle and be prepared for cold in case you get trapped in it.

Any lingering questions before we wrap up?

What to report?

- A TORNADO, Waterspout or Funnel Cloud
- Dangerous or Severe Thunderstorms (strong damaging winds, very heavy rain or large hail)
- Any Damaging Winds...(large tree limbs down or any structural damage)
- Lightning damage
- Hail...specify the size, location, and time of occurrence
- Heavy Rain...especially an inch or more in a short time (2 hours or less)
- Actual FLOODING of any river or stream, due to heavy rain or ICE JAMS
- Heavy snow...ongoing significant amounts and the total new snow after the storm is over
- Ice storm or freezing rain...especially if un-forecasted or damage is occurring

Thanks for your attendance!

Robert Haynes – robert.d.haynes@noaa.gov

If you are interested in becoming a Spotter – email me or call our office to inform us that you have completed the course. You will be given our unlisted Spotter Number.

Please provide a: Name, Address (or lat/lon), Phone Number

Web:
http://www.weather.gov/btv/stormreport

Public Phone
(802) 862-2475 (hit *)

E-mail:
nws.er.btv.operations@noaa.gov

Facebook:
https://www.facebook.com/NWSBurlington

Twitter:
https://twitter.com/NWSBurlington

YouTube:
https://www.youtube.com/NWSBurlington